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Lake "Toho" Drawdown
Snakes—In Florida

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MARCH 1971

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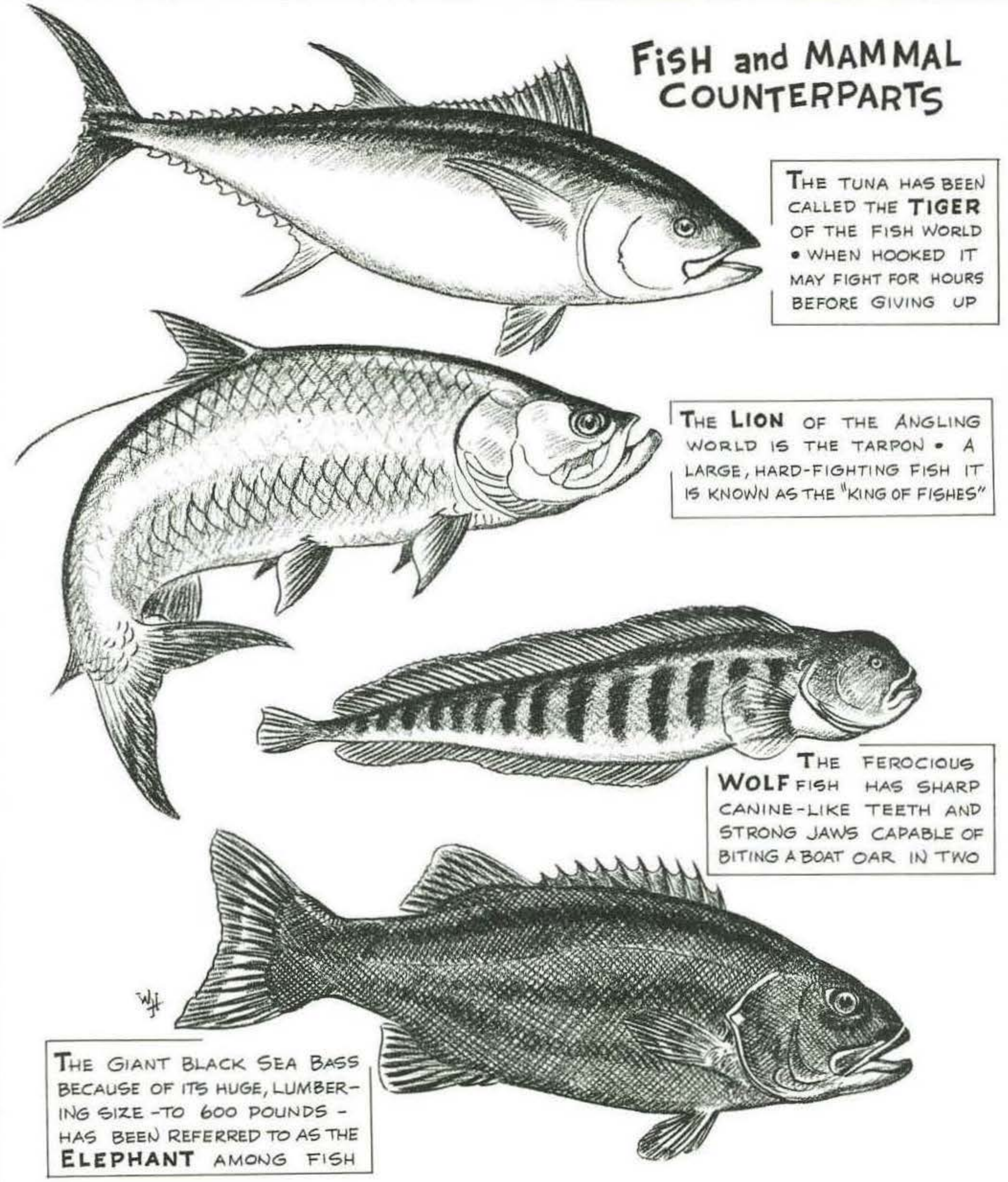
FISH and MAMMAL COUNTERPARTS



THE TUNA HAS BEEN CALLED THE **TIGER** OF THE FISH WORLD • WHEN HOOKED IT MAY FIGHT FOR HOURS BEFORE GIVING UP

THE **LION** OF THE ANGLING WORLD IS THE TARPON • A LARGE, HARD-FIGHTING FISH IT IS KNOWN AS THE "KING OF FISHES"

THE FEROCIOUS **WOLF** FISH HAS SHARP CANINE-LIKE TEETH AND STRONG JAWS CAPABLE OF BITING A BOAT OAR IN TWO

THE GIANT BLACK SEA BASS BECAUSE OF ITS HUGE, LUMBERING SIZE - TO 600 POUNDS - HAS BEEN REFERRED TO AS THE **ELEPHANT** AMONG FISH

FLORIDA WILDLIFE MAGAZINE • FLORIDA GAME AND FRESH WATER FISH COMMISSION

Florida WILDLIFE

VOL. 24, NO. 10

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The Cover

A lovable and carefree showman of the animal world, the Otter can be found throughout the state in backwoods waters where they won't be too disturbed by humans. See page 4.

From A Painting By Wallace Hughes

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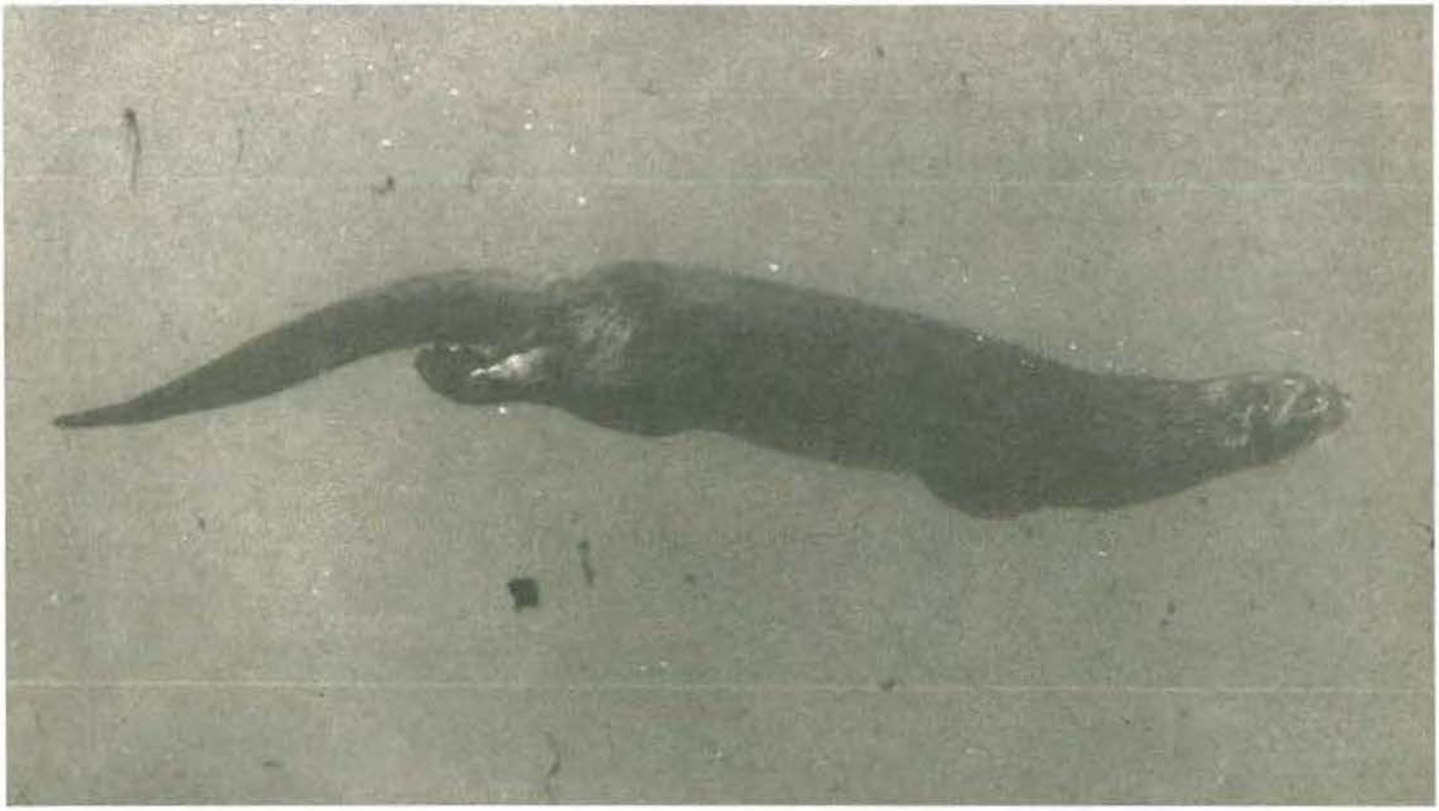

Photo By Leonard Lee Rue III

the lovable otter

". . . joyful, keen and fearless . . . full of courage and gladness . . ."

MANY SPECIES of wildlife have become associated in our minds with peculiar traits or attributes. Foxes are sly; wolves are cunning; hawks are sharp-eyed; rabbits, fleet-footed; opossums, stupid, etc.

The carefree, lovable, uninhibited showman of the animal world is the otter. We think of him as being playful, fun-loving, entertaining, and very intelligent. He really is lovable—one of the few wild creatures capable of responding to human affection, a characteristic that endears the otter to all who get to know one "in person."

Fishermen probably see more otters in their natural habitat than any other outdoorsmen—simply because otters are water-loving animals. They can *live* without a pool to play in, but true happiness in the otter's world is closely linked to the availability of a lake or stream in which to cavort by the hour.

A full stomach is important, too, of course, and food for the otter comes from the aquatic environment almost exclusively, which further links him naturally with a watery way of life.

They eat crayfish, frogs, snakes, salamanders, fish, and an occasional bird. Turtles are a favorite item in their diet.

All four feet are webbed so otters can swim with great speed and agility. They can overtake their prey with comparative ease, which undoubtedly makes meal time fun time, too. (Otters can swim half a mile without surfacing for air.)

These fascinating animals are not plentiful, but their natural range extends throughout Florida. They prefer backwoods waterways and ponds where they won't be disturbed by humans. They are active at any hour of the day or night.

An adult male otter may weigh 20 pounds or a little more and measure over four feet from nose to tail. Females are shorter and slimmer, but only by a little.

Otters breed in December and January in south Florida; through February in the northern parts of the state. Two or three young, called pups, are born about two months after mating. The den is a dry compartment under a creek bank or in a hollow stump, usually lined with grass or leaves by the solicitous mother. The young are helpless and blind at birth. They remain in the den for about two months and live with their mother for about eight months learning, step by step, how to act like otters.

It's true! The mother has to teach her offspring how to swim and where to search for food. At first, the pups are reluctant to get wet. Mother insists. Once they are in, however, swimming and diving skills are acquired quickly and the playful pups are off on a lifelong lark of water sport.

Otters play tag, chase, and hide-and-seek, in and out of the water. They scuffle, growl, and bark in mock combat, twisting, turning, tumbling, swimming on their backs, chasing their tails,—and pausing momentarily from time to time to have a look around to make certain all is safe.

The game for which they're most famous is sliding. Otters love to whiz down a mud or snow slide, often one after the other exactly like children, scrambling gleefully back to the top for another go as soon as they reach the bottom.

A well-used mud slide on a creek or river bank is a sure sign otters live in that vicinity. They maintain several such playgrounds in their area of activity, and when traveling about in search of food they cannot pass up an opportunity to get in a few slides—just for the heck of it. Sometimes they go down on their bellies; sometimes on their backs; sometimes headfirst; sometimes tailfirst.

It is said that these energetic animals may range 50 miles or more on their rounds, making overland treks where necessary to reach a given watercourse. They walk with a distinct humping gait.

I have known two otters. Both were delightful to touch; fascinating to watch. Both were completely trusting, friendly, and clean as a pin.

One was an adult, the pet of a fishing camp

(*Continued on next page*)

Photo By Wallace Hughes

Photo By Leonard Lee Rue III

Otters are master swimmers, above left and right. All four feet are webbed: the tail acts as rudder. Honest face of the otter, above, mirrors its intelligence and playfulness. Only semiaquatic, these animals also love to bask in the sun; take overland excursions to discover new ponds. An angler views the most otters in the wild.

By GENE SMITH

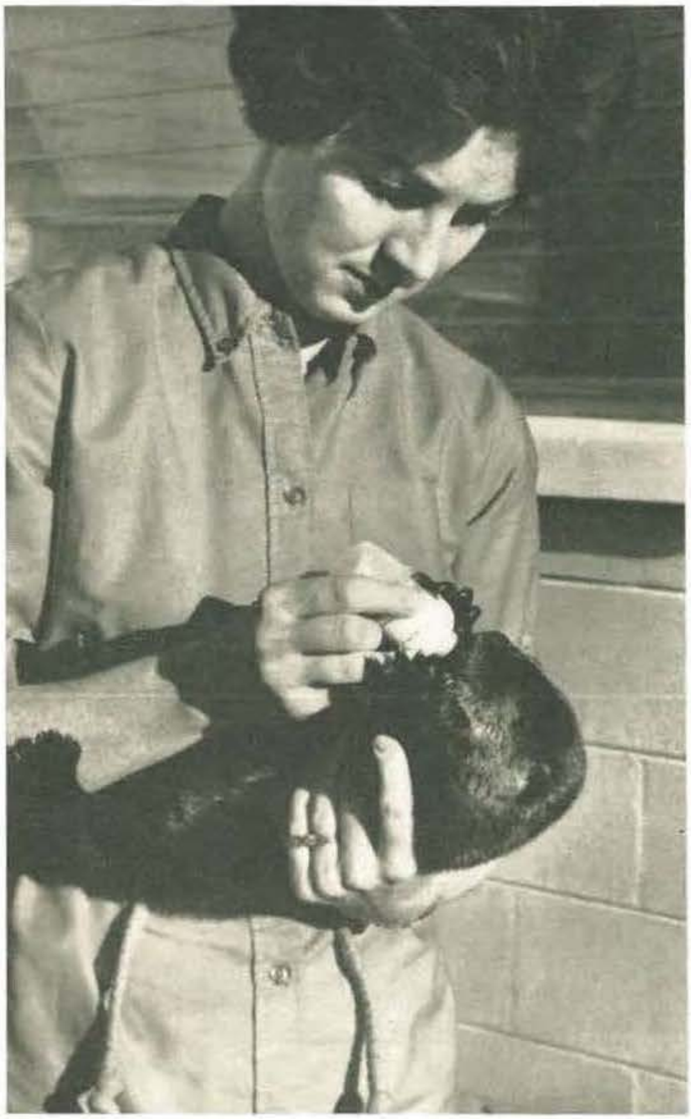

Photo By Gene Smith

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operator on Lake Okeechobee. It was the softest animal I have ever felt. The chocolate brown fur was loose and supple, and when I held the big baby in my arms it was completely relaxed and seemed to thrive on all the affectionate attention.

For fun time it would dive in the boat basin and come up under the domestic ducks, "goose" them a good one, and disappear, only to clamber out and look back at the flustered old birds as if to say, "Fooled you again, didn't I?"

The other otter of my acquaintance was a young pup, no more than three weeks old, I'd guess. It was still on a bottle when entrusted to my care temporarily for use in an educational exhibit.

During its stay at our house the little fellow played and tumbled with my children just like a puppy or kitten, but was a bit impatient about getting meals on time. More than once its nurse (my wife) was nipped on the hand for being too slow on the draw with the bottle of milk. The little "darling" had a fierce streak after all!

To be sure, any wild animal will bite. Each is equipped by nature to defend itself and to provide food for itself and its young. Tooth and claw, cunning and courage, instinct and aggressiveness are commonly shared traits of most wild carnivores, of which the otter is one.

But the otter is more than this.

Perhaps Ernest Thompson Seton said it all in The Lives of Game Animals when he wrote about "The Soul of the Otter":

"Of all the beasts whose Lives I have tried to tell, there is one that stands forth . . . without fear and without reproach. That is the Otter, the joyful, keen, and fearless Otter; mild and loving to his own kind, and gentle with his neighbor of the stream; full of play and gladness in life, full of courage in his stress; ideal in his home, steadfast in death; the noblest little soul that ever went four-footed through the woods." ●

The young otter at left, part of a Commission educational exhibit, thrived on vet's prescribed formula of powdered canine milk. A bit impatient, he bit his nurse more than once. The graceful otter below resembles a seal—but is not related—adult this size may weigh 20 pounds or more.

Photo By Larry Martin

Bass Bugs

it is time to give fishing the "big spring" try—especially with fly fishing gear for the greatest thrills, from panfish to big tarpon

By CHARLES WATERMAN

THERE IS, indeed, something of a boom in fly fishing. People are catching marlin, sailfish, and 100-pound tarpon on fly rods.

Strangely, I have a feeling the spot where the fly rod is dragging its feet most is in the black bass department. There it's been largely replaced by the spinning outfit and, especially, by the plastic worm. Many years ago there was at least one excellent volume written on the fly rod for bass, a whole doggoned book. If I thought anybody would publish it or buy it now I might try that myself.

The spinner-fly combination that used to be so popular when popping bugs wouldn't work was too light for plug casting outfits, but when the spinning rig came along we had something that threw the little stuff easier and was simple to operate.

Anything we say about fly fishing today must be said with the knowledge that few folks are going to fly fish something that works better on spinning tackle.

The popping bug is one lure that performs well only on fly tackle. Even the lighter spinning poppers don't have quite the action of the true fly rod bug. The bug won't catch the largest Florida bass most of the time, but it is highly efficient on smaller fish. A five-pounder on fly tackle is a big Florida bass. Perhaps if you used only the very large bugs you might end up with a larger average—but I'm sure you wouldn't have nearly as many fish.

I pounded Florida with huge fly rod poppers for years but came to the conclusion that the medium size bugs were better. Something around Number One or Number Two hooks catch just about as many big ones and a lot more little ones. I have decided that rubber legs definitely help on any slowly-worked bug. The slow-going bug is better nine tenths of the time. It is possible to do pretty well on bass without ever moving the bug once it hits the water, but I'm too jumpy for that kind of operation.

One of the best known anglers in America favored me with a letter (I don't hear often from such folks) in which he stated that he had never found any difference in bug colors.

I won't go that far but admit that color doesn't seem to be very important. However, it's wrong to say they all look the same from beneath, regardless of the paint. Five minutes with a face mask will straighten that out.

The most popular bug color for Florida waters is the bumblebee or simply "bee," which is painted with yellow and black stripes and usually has some rubber legs. Although I avoided it deliberately for a while because I couldn't believe it was consistently superior, I'm using it a great deal now. I think it was Dr. A.M. McCarthy of Ormond Beach who really sold me. The first time I went bass fishing with him he showed up with his cap completely studded with bugs—all bumblebees.

"They seem to be as good as anything," said he. "Why fool with anything else?"

At the time I felt it was a pretty narrow-minded way of looking at a bunch of bass bugs, but he's a good fisherman and before long I wouldn't think of going out without a couple of those bumblebees. And when you use something a lot, it catches a lot of fish.

At risk of getting into an argument I'll say that the really small bluegill bugs which work on panfish so well along in the spring, aren't likely to do too well on bass. I can't explain this. You'd think that if an eight-pound bass would take a medium size bug now and then a two-pound bass would like a few tiny bugs. It hasn't worked out that way for me.

This is an important thing because many fisher-

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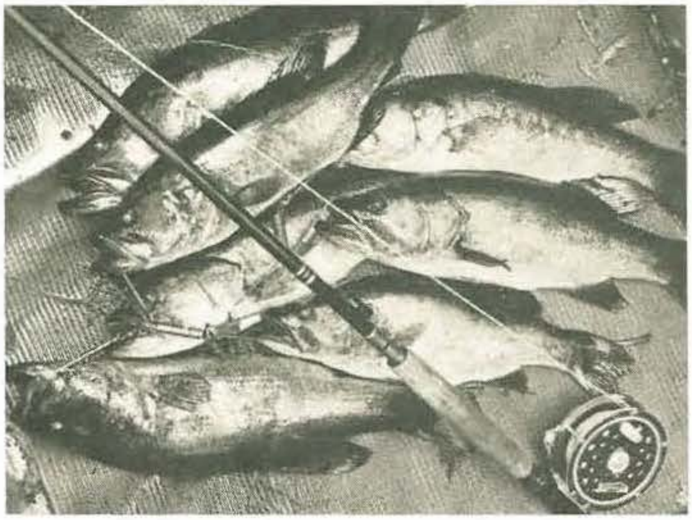

Fly rods aren't noted for catching the largest bass, but they will certainly score on small and medium size fish.

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men who catch bream on their fly rods always turn to something else for bass. They're convinced bass don't like bugs, simply because they don't take bream bugs very often. Use a bigger bug and something might happen. There are some in-between sizes that will catch only the largest bluegills and do fairly well on bass.

THE CARTOP BOAT has not always been with us. Many years ago I drew a lot of loud laughter when I drove up to a post office in a small Ozark town with a boat on top. It was about that time that my old friend, Jack Gowdy, built a boat for cartop use and rigged a carrier for it.

Jack's boat was a good one but it didn't ride well upside down so they mounted it right side up on top and he and some of his friends went on a fishing trip.

About the time they arrived at the launching spot a tremendous rainstorm came up so they sat in the car. When the downpour finally stopped one of these guys opened a door and announced a tire was almost flat. He was more concerned to note that the other tire on his side was almost down. About the time he saw a third tire was badly squashed he located the trouble—Jack's big boat up on top and half full of very heavy water.

Jack had neglected to install a drain plug in his high-riding yacht. It was too heavy to be removed without wrecking the car but he rose to the occasion and grimly drove a punch through the bottom.

IT'S PRETTY WELL accepted that spawning time, which comes from some time in February to some time in April in Florida, is the best period for large bass. The temperature of the water is important in establishing the exact dates.

There is a tendency to accept flat statements that the fish will be "on the beds" on a certain moon phase or at a certain temperature. The statement may be true but the spawning periods are spread out over a considerable time and beginners are apt to think of spawning as being a concerted rush to the beds. They say that bass spawn every month of the year somewhere in the state. Of course there's definitely a particular time when spawning is heaviest but some fishermen intending to fish spawning bass keep waiting for "the word" and suddenly find out the spawning period is past.

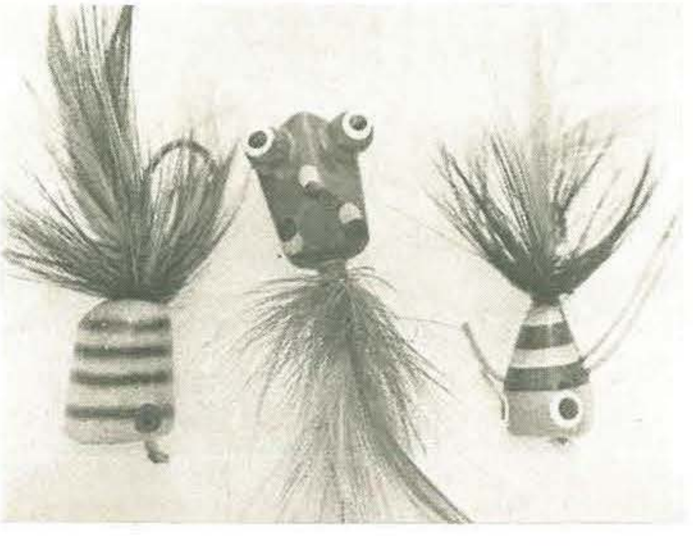
I suspect that the sportiest bass fishing is just off the spawning beds when the fish are preparing to spawn, rather than when they're actually doing it, but I am not criticizing those who catch them right off the nest. The fish management people say it's no harm and I'll take their word for it.

THE SLUDGE formed by decaying vegetation has ruined many fishing spots and I have been especially saddened to find too many rotting hyacinths in quiet backwaters that used to be good fishing. Whether a result of winter freezing or spraying, too many dead hyacinths can be a very bad thing if there's no current to clean the stuff out now and then.

But like other things about fishing, the situation isn't all black and white. I have seen the crappie fishing good where there were clouds of rotting material, almost suspended in the water. The dead vegetation would coat the bottom but be nearly afloat and a lure, striking crappie, or your oar would stir it into a gray-brown mess that made a little cove look like split-pea soup. It appeared very much like an over-supply of algae, or "bloom."

Those fish struck in a foot or less of water and I assume they were either bedding or preparing to bed. It's not the kind of spot I'd think bedding could take place but the fish were there. Incidentally, crappie ("specks") have such a reputation for being deep-water fish that they're often neglected when living in shallow water. I can't tell you exactly what makes them go to shallow water at times, when on the same days they're being caught in deep spots off the dead trees and brushpiles.

WE MAKE SOME pretty long stays away from home while chasing fish around the country. Whenever we leave our outboard motors unused for more than two or three months we either endeavor to put some sort of pickling solution into them ourselves or have a professional do it. Even with modern metals and designs the long layup is one of the chief enemies of the two-cycle engine. I believe it's cheaper to give the outboard the full treatment when you abandon it temporarily. Then I think



Some of the favorite popping bugs for bass are these two versions of the "bee," plus the frog imitation.

Crappie, noted as deep water fish in most parts of the country, are sometimes found along very shallow shorelines. These were taken on small type spinning lures.

you should plan your tuneups to come when the engine comes out of mothballs.

The exact procedure may not be the same for every mechanic but if you have any doubt, just let him take it out of the pickle he put it in. Won't cost too much.

I HEARD AN interesting discussion on tarpon the other day. It developed from a collection of old articles and books on the subject and all of the dope had been collected by a historian of fishing.

Although there was tarpon fishing 'way back before the turn of the century, it was a long time before anyone seemed able to hook very many of them. Of course tarpon are hard to stick, but not as tough as some of those early writers seemed to believe. I just have a hunch, from what I read, that they were using such huge hooks they never got them through the fish's mouth.

Then too, a lot of those oldtimers were using bait and apparently not waiting for the fish to swallow it. Possibly they were trying to set the hook before the bait got where the hook could bite. It's very hard to hook a tarpon unless the hook happens to catch his tongue, is pulled to a corner of his mouth, or is taken deep. Those of us who are so smug about our current knowledge should remember that we have the benefit of a lot of experience gathered in the past seventy or eighty years.

Lots of tarpon are caught on spoons but that's not the easiest thing to hook one with. Many of the early fishermen used spoons.

After adding the whole thing up, I'm inclined to believe the over-large hook was a big factor.

CROWDED FISHING scenes don't generally appeal to me because I have always figured fishing was something you did alone, or nearly alone, but there are crowded jetties with people having fun when the blues are running, there are bow-to-stern situations on the shad fishing grounds, and many fishing bridges are crowded on nice days.

Bass fishing seldom attracts elbow-to-elbow crowds, but it happens sometimes along the FCD gates down on the Tamiami Trail if conditions are just right. You get the exact rate of falling water and the bass are available to anyone who can find room to park. One of the nice things about that fishing is that a three-minute run with a small outboard will put you into an isolated spot.

I am trying very hard to sell fishermen on that FCD conservation area fishing between Lake Okeechobee and the Trail, and I'm not having much success. It's true there are crowds fishing right off the road but there are a lot of square miles of canal and flats fishing that are seldom touched.

It's been there for only a few years and anyone who wants to push or wade back into the grass can have a lot of fun alone. Probably the main reasons are that the area has never been commercialized much—and it is not noted for super-large bass. They're catching some really big ones now, however. Eight-pounders are not particularly unusual. It is true an airboat is a big help in getting to the best water, but a pushpole and a narrow boat will do pretty well, too.

ANYONE WHO WANTS to feel especially cozy in Florida at this time of year should think of the people who fly fish the year around in some of the northern states.

I just got a note from a good fisherman in the Northwest who said he did pretty well on trout the other day although the temperature was only ten above zero. He was fishing a spring creek where the water temperature was 52 degrees. The trick was to yank the line up fast and make the back cast quick before the line froze stiff in the air. He couldn't "shoot" line because the guides were always frozen.

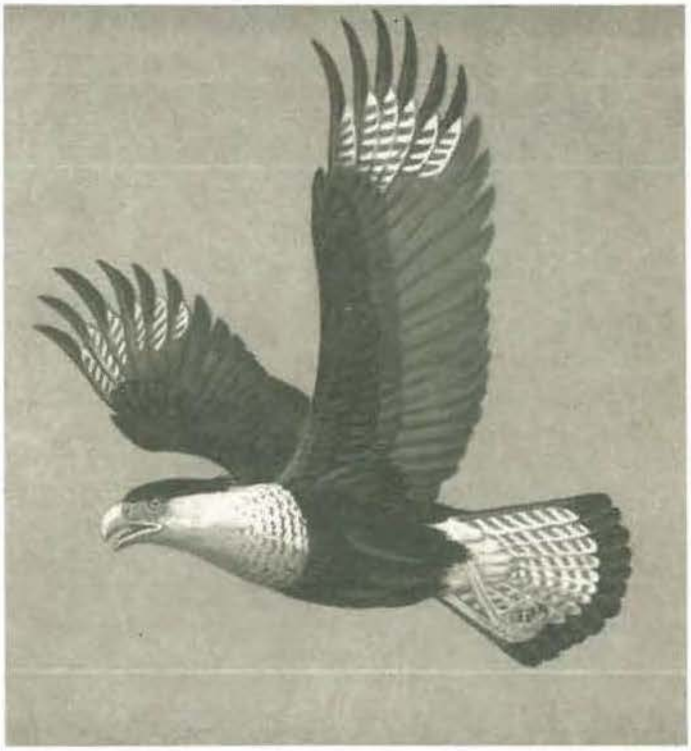
I've done some of that myself but somewhere between freezing and zero my enthusiasm begins to wane. ●

Christmas

IT RESEMBLES a military maneuver—the planning, mapping, assignments, and briefing. But the objective is not to conquer; merely to count. It is the annual Christmas Bird Count conducted by the National Audubon Society and its affiliate clubs across the country—and it's the high point of the year for most bird watchers.

How does it work? In a prescribed area 15 miles in diameter, groups of enthusiastic birders, young and old, male and female, amateur and professional, each party led by a knowledgeable, experienced leader, troop through marshes, woods and plains to list the kinds and numbers of birds they can spot in a given amount of time. They climb mountains, visit beaches, sail on waters, drive through deserts, walk through jungles, and stroll in city parks and other green areas in order to complete the bird census.

It is an emotional experience and often a competitive sport for more than 15,000 participants. The results are published by the National Audubon Society in "Audubon Field Notes," available from NAS, 1130 Fifth Avenue, New York, N. Y. 10028, and in the April issue of their fine magazine, Audubon. There you will find a general description of the Count of the past year and a detailed report on the birds sighted in each area censused in every state and province in North America. (For year-to-year comparisons of an area's bird population at Christmastime, or to find out which species you might likely see when visiting a particular locale in winter, you might like to consult previous April issues of Audubon.)


Caracara

Drawing by Wallace Hughes

To report the most accurate and complete count of number and species seen is the aim of each group of birders, so it is quite natural that friendly competition has arisen in the matter of the Christmas Bird Count.

For many years, San Diego, California has led the list of "most species seen," with Cocoa, Florida coming in second. Preliminary results of the 1970 Count indicate, however, that Cocoa came out on top for a change, with 205 species sighted on Count day! San Diego's birders could find only 196 species —apparently because of a week of inclement weather that coincided with the Christmas Count there.

As in the case of the postman, neither snow, nor rain, nor the freezing temperatures of Alaska, nor impassable terrain like that of Florida's subtropical marshes, stay the counters from their appointed rounds. They walk, use snowshoes, drive jeeps, ride bicycles; they canoe, hire commercial fishing boats, airboats, airplanes, and helicopters; some even drive swamp buggies and dog teams.

Each year their number increases—a far cry

Brown Pelicans

Photo by Lovett Williams

Bird Count

By SABINE EHLERS

from the first Christmas Bird Count, made in 1899 by one man, the late Dr. Frank Chapman, who recorded all the birds he saw on Christmas Day around his home in New York City.

Dr. Chapman was Curator of Ornithology at the American Museum of Natural History at the time and publisher of the magazine Bird-Lore, which became Audubon in 1940. He became intrigued with the idea of having enthusiastic amateurs make the count around the nation, believing that an accurate record of birdlife so obtained would be of inestimable value to ornithologists everywhere.

It so happens that before 1900, there were few laws to protect birds in the United States. In fact, one of the favorite hunts of sportsmen in the 1890's was the Christmas Day "side hunt." Hunters met at a designated place, chose sides, and went into the woods and fields to kill practically everything in sight wearing fur or feathers. Sometimes hundreds of birds were slaughtered in a single day, and the results were gleefully reported in sportsmen's journals, according to an article in the November 1969 issue of Audubon, "The First Christmas Count, December, 1900."

By the time Dr. Chapman made his count, side hunts were a thing of the past, but a Bird-Lore writer wasn't so sure something similar wouldn't return, and the article proposed "a new kind of Christmas side hunt in the form of a Christmas bird-census. . . ."

" . . . We hope that all our readers who have the opportunity will aid us in making it a success by spending a portion of Christmas Day with the birds and sending a report of their 'hunt' to Bird-Lore before they retire that night. Such reports should be headed by locality, hour of starting and of returning, character of weather, direction and force of wind, and the temperature; the latter taken when starting. The birds observed should then be added following the order in which they are given in the AOU (American Ornithologists Union) Checklist, with, if possible, the exact or approximate number of individuals of each species.

"Promptness in sending these lists is urged in order that the best of them may be published in our February number, where they will be not only of interest to other participants in the hunt, but will also constitute, in a measure, a census of Christmas birdlife."

So the Count began.

In 1939, an article in Audubon, by Leonard Wing and Millard Jenkins, reported: "Since that first Christmas census was taken thirty-eight more Christmases have passed and 6,290 individual censuses have been taken and published in Bird-Lore. They constitute 6,290 of the finest monuments to the amateur ornithologist and to the genius of their originator. Nowhere else in the world of biological

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science does there exist a body of data comparable to the Christmas census!"

The response to Bird-Lore's proposal was 25 Counts by 27 persons from 15 states and provinces. By 1939, reports had come from all states and provinces except Nevada. A few had come from Cuba and Puerto Rico. Connecticut, Massachusetts, New Jersey, New York, Pennsylvania, Ohio and Wisconsin have participated from the beginning without missing a single year.

And so the participation and the Counts continued to grow. In 1959 there were 572 Counts made by 7,477 observers, with 156 species being sighted in the 26,817 birds counted.

In 1970, with all states and provinces participating, some 900 Counts were taken and reported by approximately 15,000 observers.

All information has been duly reported in "Field Notes." Bird hobbyists and professional ornithologists studying the journal find a wealth of information from the Christmas Count reports. For example, there are records of new birds seen in certain areas, reports of changes in geographical trends—facts from which a birder can discover areas of abundance and scarcity. So, the Christmas Count is a tool for the scientist, a body of information on the bird population, and an indicator of trends.

Bar-tailed Godwit

The importance of the Count lies in going back to the same area at the same time of the year, year after year, and noting the trends in species and population.

Dr. Carl W. Buchheister, President of the National Audubon Society from 1958 to 1967 (now President Emeritus) and a member of the Board of Trustees of the Edward Ball Wildlife Foundation, Tallahassee, cites three interesting examples of how trends change, and the part the Count plays in recording them.

In 1968, during the Count in Leon and Wakulla counties, a number of Evening Grosbeaks were seen for the first time. These birds are native to Canada and some parts of the northern United States. During that winter, 300 to 400 Evening Grosbeaks were seen. The following year, in exactly the same area, in the same period, birders did not find a single one.

What does this show? According to Dr. Buchheister, it shows that the bird has peculiar movements that are not migrations. If the Count over the years would show such movements in five years, or every 10 years, or some other regular interval, then one would have a pattern of movement that could establish a trend.

Another such example is that of the Black-backed Gull, the largest gull in the northeastern part of the United States.

"In the 1900's, these birds were so few in numbers," says Dr. Buchheister, "that it was believed very few nested any longer in the Northeast."

The gull was badly exploited by shooting to obtain his plumage for commercial use, and its eggs were being used for human food. (They are larger than duck eggs and quite edible.)

In 1918 the Federal Migratory Bird Treaty Act was signed between the United States and Canada to protect migratory birds in both countries. The gulls, of course, came under this protection.

Bird counters in Maine, New Hampshire, and Massachusetts found a decided upward trend in the Black-backed Gull population in 1970, even taking into account the fact that in early years the census included very few Counts.

If for the same period one adds the Counts in Connecticut, New York, and New Jersey coastal areas, then one would find that in the early part of the century the Black-backed Gull was rarely seen south of Montauk, New York. But so abundant has this bird become that now it is seen regularly off the North Carolina coast and as far south as Cocoa, Florida.

The Wood Duck, seen in most of North America, on the other hand, had a large population in the late '30's and early '40's. Then the trend downward became noticeable by the Bird Count groups, and the Federal government eventually forbade the hunting of this popular game duck for a number of years. Now that the population shows an upward trend, the season is once more open, but the number of Wood Ducks that may be taken is closely regulated.

The attempt at securing valid, dependably accurate Christmas Count information can be seen in the rules the participants must follow.

Allan D. Cruickshank of Rockledge, Florida is Christmas Bird Count editor and Chandler S. Robbins at the Patuxent Wildlife Research Center, Laurel, Maryland is the technical editor. Between them they make certain the rules for the Count are followed. A Count form is furnished each leader and a sample, filled-out form serves as a guide for the correct presentation.

A Count area must preferably fit into a 15-mile diameter circle. The date and time of observation must be given, and the weather carefully described on the day of the Count, which, itself must be selected within close guidelines.

The number of observers in each party, total hours during which the observation took place, method of locomotion, and miles covered are also to be listed on the form. Name and number of species sighted comes next, and then the totals.

Dawn-to-dusk (or longer) Counts are preferred; those of less than 8 hours are not printed unless they were conducted in the Arctic areas or in open seas.

The name and address of the compiler and the names of all the observers in each group are required. In recent years a $1.00 fee has been charged each participant as costs of publishing "Field Notes" has increased.

In discussing the dangers to America's bird life, Carl Buchheister and Allan Cruickshank touched on the various problems related to the increase in human population and the general disregard for habitat in which wild birds and animals live. They cited encroachment into natural areas for building homes, highways, factories and parking areas; increasing pollution of our environment by industrial and other wastes and through the use of persistent pesticides; and the indiscriminate invasion of heretofore inviolate sanctuaries by persons operating special-purpose motor vehicles designed for use where there are no roads.

Dr. Buchheister referred specifically to the plight of the Brown Pelican, which is in danger of extinction because of the effects of "chemical pollution"—DDT—on its reproductive capacity.

"So great has been this environmental pollution that it is virtually impossible to find creatures living in salt waters that do not show traces of pesticides in the tissues of their bodies," he says.

Possibly it is still not too late. With the awakening of the public to the danger of human epidemics from pollution, the efforts of such groups as the Audubon Society's Conservation and Education Committee, the appeal of ecological studies to bright young people, the renewed interest of government in guarding the environment, and the acceptance of the challenge to clean up by American industry and municipalities—perhaps this trend toward disaster for birds, animals, and humans, may still be reversed.

Let us hope the Christmas Bird Counts of the next 70 years are as productive, as useful to science, and as much fun to compile as were the Counts of the past 70 years. And let us not lose sight of the fact that trends in wildlife populations are good indicators of the quality of the environment in which man must also survive. ●

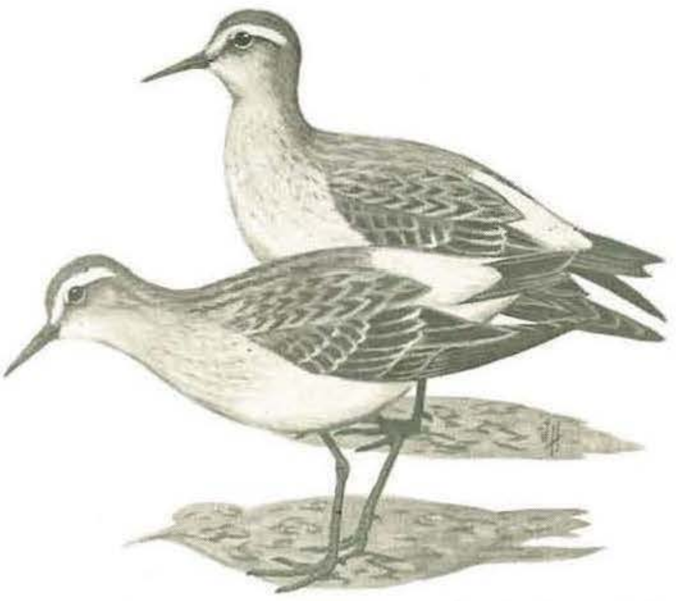
Unofficially, Florida's 1970 Christmas Bird Count at Cocoa in Brevard County turned up the nation's longest list of different species: 205.

According to Count editor Allan D. Cruickshank of Rockledge, counters at Freeport, Texas were a close second with 204, and San Diego, California was third with 196 species observed on "*the* day."

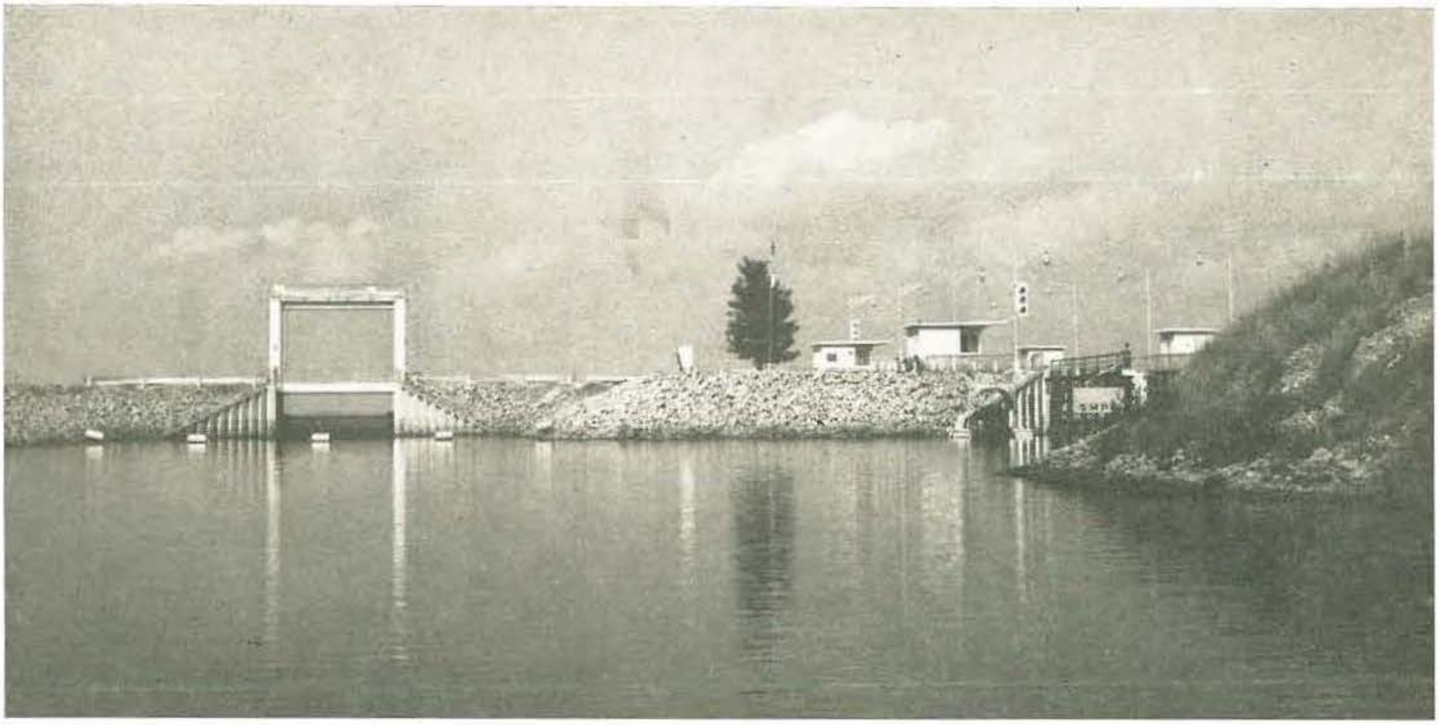
Cruickshank said the 88 observers in the Cocoa Count were somewhat disappointed because they missed seeing a number of species that had been in the vicinity up until a day or two before the Count, but were nowhere to be found during the Count. (Some popped up again afterward! he said.)

Offsetting such frustrations was the recording of three species for the very first time: the Bar-tailed Godwit, a shorebird of the Far North, rarely recorded south of Alaska!!; the White-rumped Sandpiper, also a shorebird, normally a migrant in Florida in spring and fall; and the Caracara, a year-round resident of the state, but not normally found as far north as the Cocoa Count area in recent years.

An exotic bird, the Smooth-billed Ani, was reported this Christmas by five different observers, said Cruickshank, who confirmed that it is a breeding species in the Cocoa-Merritt Island area now.



White-rumped Sandpiper Drawings by Wallace Hughes



Lake "Toho" Drawdown

IT'S AN AMBITIOUS, imaginative program, researched, organized, and executed with speed and a minimum of red tape—an outstanding example of positive action by the Game and Fresh Water Fish Commission to create better fishing through lake management.

The partial draining of Lake Tohopekaliga to prolong its life was idea'd in 1968 by William L. (Bucky) Wegener, a Commission fisheries biologist. After presenting his idea to the public, securing the cooperation of other agencies, and carrying out the preliminary investigative work, the physical drawdown of the lake began in January 1971.

Wegener realized the 23,000-acre lake, the headwaters of "the last major chain in the state still supporting a self-sustaining, dynamic sport fishery" was deteriorating rapidly through the ever-increasing inflow of pollutants. He recognized, too, that the situation would worsen as the population surged when nearby Disney World opened.

A drawdown seemed to be the logical answer.

The philosophy of lake drawdown is not new. Nature is its oldest practitioner, periodically alternating floods with droughts. At Lake Tohopekaliga, for example, records indicate that between 1951 and 1960, water levels varied as much as 10½ feet—from 49 feet to 59½ feet above mean sea level. While prior records are lacking, oldtimers around Kissimmee vouch that these extremes appeared in each decade for years back.

As ranches, farms, and homes increased in the area, water control became necessary. A series of spillways and locks erected by the Central and Southern Florida Flood Control District in the early '60's now allows only a three-foot fluctuation—from 52 feet to 55 feet above mean sea level.

In essence, the drawdown project is an attempt to duplicate the natural conditions existing in the lake before water control became essential. Obviously, only the lows can be repeated. Highs would now cause severe flooding.

The Kissimmee Chain of Lakes splits through central Florida from south of Orlando to Lake Okeechobee. Biggest lakes in this chain are Lake Tohopekaliga, East Lake Tohopekaliga, Cypress Lake, Lake Hatchineha, and Lake Kissimmee. Excepting East Lake Toho, they all connect by navigation locks. You can launch your boat at Kissimmee for a run down to Lake Okeechobee, then on to the Gulf of Mexico through the Caloosahatchee River or to the Atlantic Ocean by way of the St. Lucie Canal.

The drawdown isn't as simple as pulling the plug at the Southport Spillway at the south end of the lake. For starters, lake levels of the other bodies of water, both above and below Lake Toho, had to be adjusted.

East Lake Toho feeds into Lake Toho through the C-31 Canal. Happily, (for this project anyway) low water conditions prevailed as the new year started. In early January, East Lake Toho was lowered so it could accept and store incoming water with no discharge into Lake Toho while the bigger lake was being drawn down.

Also, to prepare them to accept the drained-off water, control structures in the lakes below Lake Toho were opened to put them into low pool stage prior to the Januray 18th opening of the Southport structure.

Eventually, the extra water will run into 448,000-acre Lake Okeechobee as a "drop in a bucket" to this massive lake.

The drawdown schedule—and its implementation—is based on a normal rainfall pattern. The low level of 49 feet above mean sea level, reached by March, will be held through May. Nature will then be allowed to take its course. With no rain, the lake will stay down for a few extra (and beneficial) weeks; with much rain, the lake will fill up to its normal level. In any event, the aim is to hold the lake at a low level for a minimum of three months.

At 52 feet above mean sea level, (normal low pool stage) about 5,000 acres of Lake Toho are exposed. At 49 feet above mean sea level, an additional 4,500 acres will be added. At this drawdown elevation, all of the lake's vegetation will be out of water.

Lake Toho is important as a water supply, for the wildlife it attracts, and for the fishing and recreation it supports.

Lake Okeechobee is the major source of public water supply for south Florida. And the Kissimmee Chain is the main source of water for this big lake. Pollution of this chain thereby affects Miami's drinking water. And Lake Toho sits at the head of this chain.

The lake attracts ducks, snipe, sandhill cranes, eagles, and a host of other birds associated with an attractive aquatic habitat. And the fishing can't be much better than it is. One national magazine recently boasted that the "lake is a prime producer of big bass over a major part of the year." And, "It is among the top three of the nation's top bass fishing spots." Another well-known fishing expert praised the lake, suggesting that "it may be the finest big bass lake in the world."

Speckled perch (black crappies) grow heavy and in abundance as do the shellcrackers. Chain pickerel like the weedy environment. Brown bullheads and white catfish are caught both commercially and for sport. Wegener has counted as many as 200 boats on the lake at one time.

A logical question is, then, "Why mess with it? When you have a good thing going, let it alone."

Although it came about before the current "awareness" to such dangers, Lake Apopka, just a few

(Continued on next page)

By ART HUTT

Photos by Art Hutt

Main regulatory plug to control Lake Toho drawdown is Southport facility, above left, at south end of lake. Biologists Wegener, foreground, and Holcomb examine algae attached to maidencane, above photo. Algal growth indicates enrichment problem. Shellcrackers, right, are big drawing card in Lake Toho. Wegener expects improved fishery after the drawdown.

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miles northwest of Orlando, is a visible example of the "hands off" philosophy. Once the state's finest bass fishing spot, it is now a cesspool. A massive (and costly) restoration plan using the drawdown technique is now underway, but recovery from death may prove extremely difficult.

Since Lake Toho evidenced every sign of following Lake Apopka if left alone, the drawdown is a maintenance effort used in an aggressive struggle to keep the lake productive.

As Wegener warns, "We're going to lose the lake if we don't do something about it. We can research it to death, but now we're in a positive and active program."

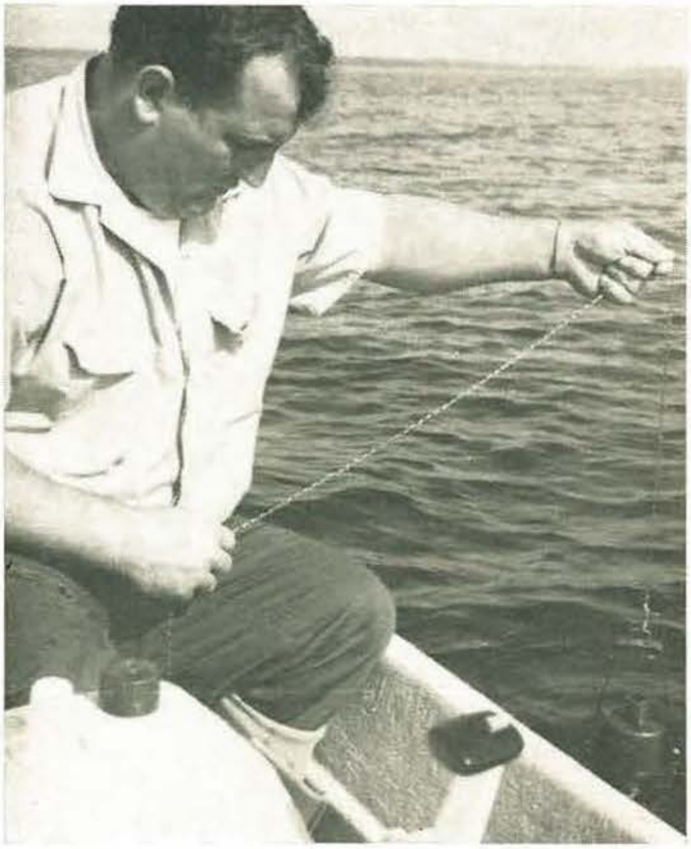
In retrospect, why did Lake Toho start to sour?

Dennis "Smokie" Holcomb, fisheries biologist, reasons that it resulted from a lack of foresight. With no regulation of human population by the zoning of flood plains or bulkhead lines, people built homes, planted, and established ranches right down to the low water level.

When the water rose to its natural high, "flood conditions" existed, and people demanded water control. Instead of the human population being regulated to fit the natural water fluctuations, Mother Nature now had to be regulated to fit human needs.

Man's reaction was the water stabilization plan which prohibited natural flood-and-drought cycles. However, even if this ten-foot fluctuation had been allowed to continue, it is possible the degrading effect of increasing population pressures may have overridden the advantages of the natural variations.

Photos by Art Hutt



Lake Toho is famed for its year-round yield of big bass, below left. All investigative work and management, including water sampling for chemistry, above, are aimed at improving that resource. Washday in St. Cloud is followed by "froth day" in Lake Toho, below right. Soapsuds enter via C-31 canal as part of the million gallons per day inflow.

Wegener, with the help of Holcomb, (a specialist at water chemistry surveys, algae, and aquatic vegetation) has documented the decline of Lake Toho.

At the north end of this shallow lake, muck has accumulated, prohibiting desirable vegetation growth, and limiting some forms of biological productivity. Wave action in the few-feet-deep water creates an instant turbidity which has frequently been on the verge of causing fishkills. Also, the up-to-two inches of clay siltation from a 30-acre landfill operation at Kissimmee has adversely affected lake productivity and added to the serious problem of water turbidity.

Exposed to sun and air, this muck and clay will turn into useful soil. Bottom productivity will increase and loose particles on the bottom will solidify and not go into suspension to create turbidity.

According to 1965 figures (and they'd be much higher now), beautiful but deadly Shingle Creek, "a major contributing factor to Lake Toho's death," draining southwest Orange County and including the effluent of two disposal plants, donates 6,000,000 gallons of potent liquid per day to the lake. From the same outdated figures, 2,000,000 gallons per day are contributed by Kissimmee, and St. Cloud sends another 1,000,000 per day via the C-31 canal. (Tuesday is "froth day" at the outflow pipe in the canal; it takes a day for Monday's wash detergents to travel that far!)

The drawdown, while not curing any of these contributing sources will at least be an experiment in tying up many of these nutrients in solid soil where they can be used by preferred aquatic growth.

A fluctuation, natural or otherwise, has a direct influence on the type of aquatic growth a lake will support. Lake Toho is shallow, with weeds along its shores and in islands scattered all over the lake. Happily, the best species, such as maidencane (*Panicum*), bulrush (*Scirpus*), and eelgrass (*Vallisneria*) seem to thrive on this change, either from stimulation through exposure or by the improvement in the substratum in which they are rooted.

Algae abundance in Lake Toho indicates the lake is on a downhill slide. It certainly reveals a high degree of pollution. Among the worst blue-green algae, *Aphanizomenon* and *Anacystis* have been rampant in the lake since January 1970. Toxic substances produced by these algae are capable of causing sickness and death in a wide range of animals—from dogs to humans. Other algae are also present, occurring in seasonal pulses.

These algae thrive on carbon dioxide, this gas produced by bacteria of decay working on the organic goo on the bottom. Exposed to air and light, bacterial activity will increase; carbon dioxide will go off into the air—not into the water. When reflooded, the nature of the bottom having been altered by exposure, Wegener expects diminished bacterial activity with less carbon dioxide given off; hence, fewer algae.

Facing facts, obviously we must learn to live with a degraded water quality. The Lake Toho drawdown may yield some answers applicable to other shallow lakes in our state which are also "suffering." And, in the case of Lake Tohopekaliga, it is important to establish a precedent; increased water demands of the future may prohibit a drawdown later unless the pattern has already been established.

Another merit of this program is that it makes communities more aware of the problem, and may arouse them sufficiently to take some action regarding their adverse contributions.

This "new" fisheries management tool has been used in Missouri and Louisiana, with biologists noting better bass growth and reproduction, the improved catch of bigger and more fish, the decline in the population of non-predator fish, the increase of bottom organisms, and the control of some obnoxious vegetation. (Many property owners took advantage of the low water to repair their docks.) These biologists stressed the importance of the timing of the drawdown and the refill.

In Florida, two natural drawdowns and one artificial have occurred. Lake Trafford (1,494 acres), near Immokalee, dropped drastically during the 1962 drought, causing a solidification of the bottom area which was exposed. A sand bottom with eelgrass resulted.

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Black crappie catches, left, are good in Lake Toho in late winter. The chain pickerel, above, was a bonus for drift fisherman. Drawdown is attempt to expose shallows, below right, to beneficial effects of sun and air. These saucer-shaped lakes are well suited for this type fish management.

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If you look at any fishing magazines, you've read about 4,000 acre Lake Jackson near Tallahassee. Dried up as a result of a sinkhole, in the past few years after refilling, it has become a leading producer of big bass in the nation. And that's for bass over ten pounds!

Several mechanical drawdowns have been used on Merritts Mill Pond near Marianna as far back as 1958 to increase shellcracker populations and to control aquatic vegetation and algae.

An important consideration about drawdowns is that they work most effectively in shallow lakes where a drop of a few feet will result in a great deal of shoreline exposure. As a general rule, nearly all Florida lakes could be candidates for the drawdown method of fisheries management.

Since the Game and Fresh Water Fish Commission's actions are subject to the will of the people, Wegener had to "sell" his idea for acceptance by the people who would be involved and by several agencies, state and federal.

In a remarkable display of cooperation, when the "why" of the project was explained, even those who were directly involved in obtaining their livelihood from the lake, such as fish camp operators, supported the drawdown, realizing this short term inconvenience would gain them more than they would lose. While ranchers will gain some pastureland for a few months, it also means they'll have to extend their fences as the water drops. A few farmers may have to lengthen irrigation ditches. But, with few exceptions, the idea has been accepted completely.

Fleetingly disagreeable will be the lack of aesthetic appeal, the hindrance to boating, a possible odor of decay, a few very localized fishkills, and some spawning areas destroyed which, regarding the latter, are not required of every female bass every year anyhow.

With no direct authority over water levels, the Commission worked closely with the Central and Southern Florida Flood Control District, G. E. Dail, executive director. Although this agency is responsible for the level of these particular lakes, since the drawdown deviated from their approved project regulation schedule, and since they lack authority to manipulate water levels for water quality purposes, they turned to the agency which has recently undertaken this task—the Air and Water Pollution Control Board under the chairmanship of Nathaniel P. Reed.

But it couldn't stop there. The Army Corps of

Engineers became involved, too, as they have the authority to establish water control regulations for use of storage allocated to flood control or navigation in reservoirs, lakes, and storage detention areas constructed wholly or in part with federal funds. Ted Haeussner, Chief, Water Management Section, supervised the Corps' part in the drawdown project.

Much red tape was cut in record time.

These agencies have given the drawdown their wholehearted support. Dail, like the others, is enthusiastic about the project but does not regard it as "a panacea for preserving water quality in our lakes, but we feel it is necessary to document this approach to water quality management and its results since it appears in the coming years it will be as important to protect the quality of the waters we manage as it is the quantity of these waters."

Reed applauds the Game and Fresh Water Fish Commission's effort, saying "The Department of Air and Water Pollution Control welcomes the experiment and pledges our support to ending the continual discharges of undertreated wastes allowed in the past by other Departments." He adds that "man has been too little concerned with the dramatic acceleration of these central Florida lakes' death symptoms." He believes Florida residents, accustomed to standard and controlled lake elevations, "must learn to welcome systematic drawdowns and raisings which will rejuvenate and lengthen the life span of our world renowned lake systems."

Haeussner thinks that "artificial drawdowns, when properly planned and executed, represent an excellent water management tool for restoring and enhancing water quality and environmental conditions in shallow lakes and reservoirs."

The five-year management program, estimated to cost $100,000 started last July. Surveys of fish populations, invertebrate populations, vegetation types, organic deposition studies, algae studies, water chemistry studies, creel census studies, and data analysis report writing are all part and parcel of this project. "Before" and "after" comparisons will be important.

In the future, drawdowns at Lake Toho will cost not much more than opening up the gates. It is likely drawdowns will have to be repeated as the condition of the lake warrants.

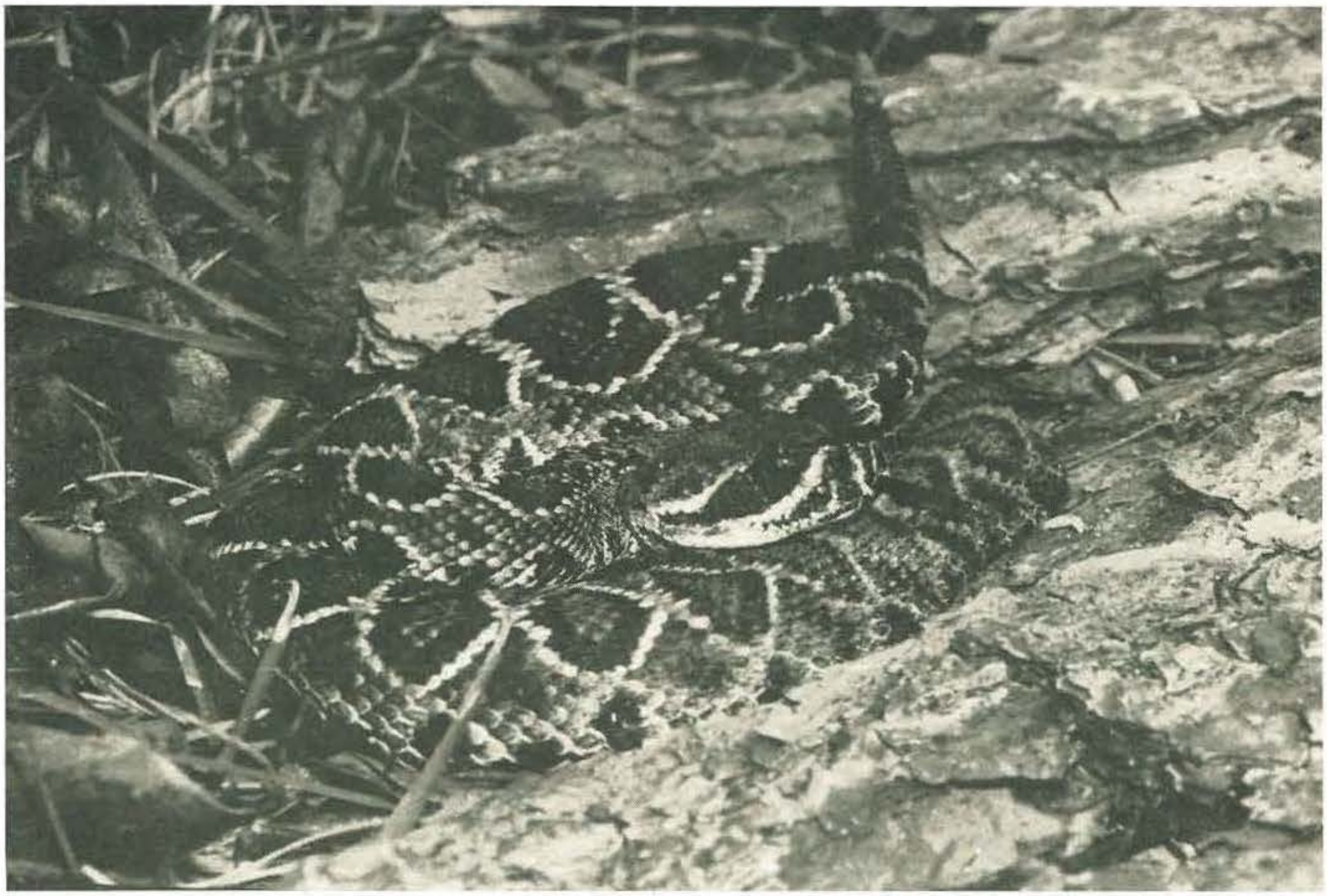
While Wegener has spearheaded the drawdown, he wants no misunderstanding about the help he's had in designing and implementing the project. "The entire fisheries division, or for that matter, the whole Game and Fresh Water Fish Commission has contributed wholly or in part to the success of its beginning. With their continued unbiased support, it should carry through to a successful ending."

The hard, sobering—and disturbing—fact remains that there is *no* way to restore a lake to its original condition until you stop polluting it. Drawdowns can only lengthen the life of a lake, and gain a little time until the real solution—no pollution—can be arrived at.

Dail sums it up well by saying, "We should all recognize that the lasting solution will lie in our ability to curtail and hopefully someday eliminate nutrient laden runoffs from all sources to our lakes and streams."

It is common sense to believe that a preventive, life-prolonging step now would prove more effective and less costly than a complete renovation later. With proper application, water level manipulation could become one of the best fisheries management tools available. ●

Photos by Art Hutt



Venomous Snakes In Florida

THERE IS A POPULAR feeling that a venomous snake should be regarded as a reptilian adversary—waiting silently for an opportunity to pierce its fangs into some luckless passerby.

This, of course, is not true. A poisonous snake is at least as anxious to avoid you as you are to avoid it. Since the fangs of any venomous snake were primarily evolved as a more efficient means of procuring its prey, and since their use in defense is secondary, it is to the snake's advantage to employ them as little as possible for anything other than getting food.

Venomous snakes are a natural part of the ecology. They evolved with the other forms of wildlife in their range and are no more a menace to their fellow creatures than are the other carnivorous animals. In fact, the threat from venomous snakes in that respect is less due to their low metabolism. They require relatively small amounts of food.

In areas where human habitation is dense it could not be expected that poisonous snakes be allowed to remain as cohabitants, but in wilderness regions there is no reason to kill a poisonous snake that is offering no threat. There are few enough areas left that are even partially remote from man—especially in Florida. The belief that wildlife exists merely for exploitation by humans, and that any animal "inconvenient" to man should be destroyed, is becoming outmoded. (In Arizona, to cite a notable example, the poisonous lizard known as the Gila monster has been granted rigid legal protection.) The realization is expanding that ecological structures, not just particular species, must be preserved—and snakes of every kind often play a significant role in ecological balances.

Florida, to someone unfamiliar with the state, may inspire images of a swampy mosquito-ridden land harboring a snake behind every bush. It is true there are more species of snakes in Florida than in any other state, but it is also true that during warmer months a wanderer in some northern forest would have as great a chance of encountering one—even a venomous one—as would someone in Florida.

All venomous snakes are divided into three families: the Viperidae, the Elapidae and the Hydrophidae. The latter comprises a group known as sea snakes and is represented in the Americas only

Photos by Ronald Sayers

The respected Eastern Diamondback Rattlesnake, left, is our largest and most widely distributed poisonous snake. It is the most dangerous despite the more toxic venom of the shy, beautifully colored Coral Snake, above, a nocturnal snake.

By TOM STUBBS

on tropical Pacific coasts. The other two families, however, are generously represented on the American continents. The Elapidae includes some of the more spectacular species such as the African mambas and cobras. In America, that family's representatives, known loosely as "coral snakes," are characteristically small and secretive. The Viperidae embraces those snakes having the appearance typically associated with dangerous serpents: wide, swollen heads, mouths that seem to curl into a leer, and large, erectile fangs. In the United States there are three genera of viperine snakes, including more than 60 species, among them the rattlesnakes, the copperhead and the cottonmouth.

The dangers of venomous snakes are usually exaggerated due to the general aura of fear and misunderstanding surrounding snakes of any kind. True, the bite of a poisonous snake of any size may be serious, and efficient bites from some of the larger species are quite likely to be followed by disfigurement or permanent physiological damage—if not death. But in evaluating the danger of a poisonous snake, there is more to consider than the actual potency of the snake's venom. There are numerous variables which, in acting with or against each other, produce a high number of possibilities to affect the seriousness of any given case of snakebite.

When a snake injects venom it is not performing a reflex act which, by virtue of being executed, assures that a quantity of poison will be expended.

Dr. Archie Carr of the University of Florida zoology department was bitten two years ago in Costa Rica by a large fer-de-lance, an extremely dangerous viperine snake of the tropics. Apart from the fear and confusion that naturally accompany such an experience, he suffered no ill effects. There are other records of similar instances. Since venom is primarily for the procurement of food, as we mentioned, it is possible that a tendency is being evolved with snakes of that species, in that area, to conserve their venom supply. A large animal will not die instantly anyway, so the desired defensive effect—that of creating enough turmoil to permit escape by the snake—is the same whether or not any venom is injected.

At any rate, certainly any poisonous snake will

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vary from another in the quantity and, significantly, the quality of venom it produces and injects. If a snake has recently fed, or if it is in poor health, it is probable that its bite will not be as serious as that of another snake of the same size and species that is hungry and in excellent condition. Also, a greatly annoyed snake is more apt to deliver a fatal bite than one that has not been so aroused.

Other variables include the depth of the fang punctures, the position of the bite, the bitten person's general health, and possible hypersensitivities of the victim.

So it is difficult to pre-evaluate the danger of a given snake's bite. Aside from factors affecting the potency of the actual bite, there are other things to be considered in deciding whether or not to label a snake truly dangerous. Some snakes with remarkably toxic venom have rather ineffectual means of injecting them. Coral snakes are a good example; sea snakes are another. The inclination of the snakes to biting also affects whether or not they are a real menace. Some potent species can hardly be induced to bite anything, so they cannot be regarded as a threat.

It seems that if there is any serious ailment about which doctors and laymen are not sure what to do, it is snakebite. Any source giving information on the subject is liable to suggest something different from any other source. It seems appropriate to emphasize some things that should *not* be done in snakebite cases as well as a few that should. It is a certainty that the misinformation surrounding the subject has frequently led to "treatments" resulting in more damage than would have been incurred from the bite. The majority of poisonous snakes in the United States are not highly dangerous. In no case is anything to be gained by a near-mutilation of the bite victim.

For some time a method of treatment known as cryotherapy was in vogue. In this, the victim's bitten part, usually a hand or foot; an arm or lower leg, is encased in ice to retard movement of the venom.

While this in itself is valid, it is also true that as soon as the bitten appendage warms again, the victim is right back where he started. "Freezing" or cooling venom does not destroy its toxic properties.

Cryotherapy often results in a great amount of tissue damage—sometimes quite as much as would have occurred from the effects of the venom. And since the venom has not been altered, but only slowed in its movement, the tissue may be all but destroyed by the combination of the venom's action and the treatment.

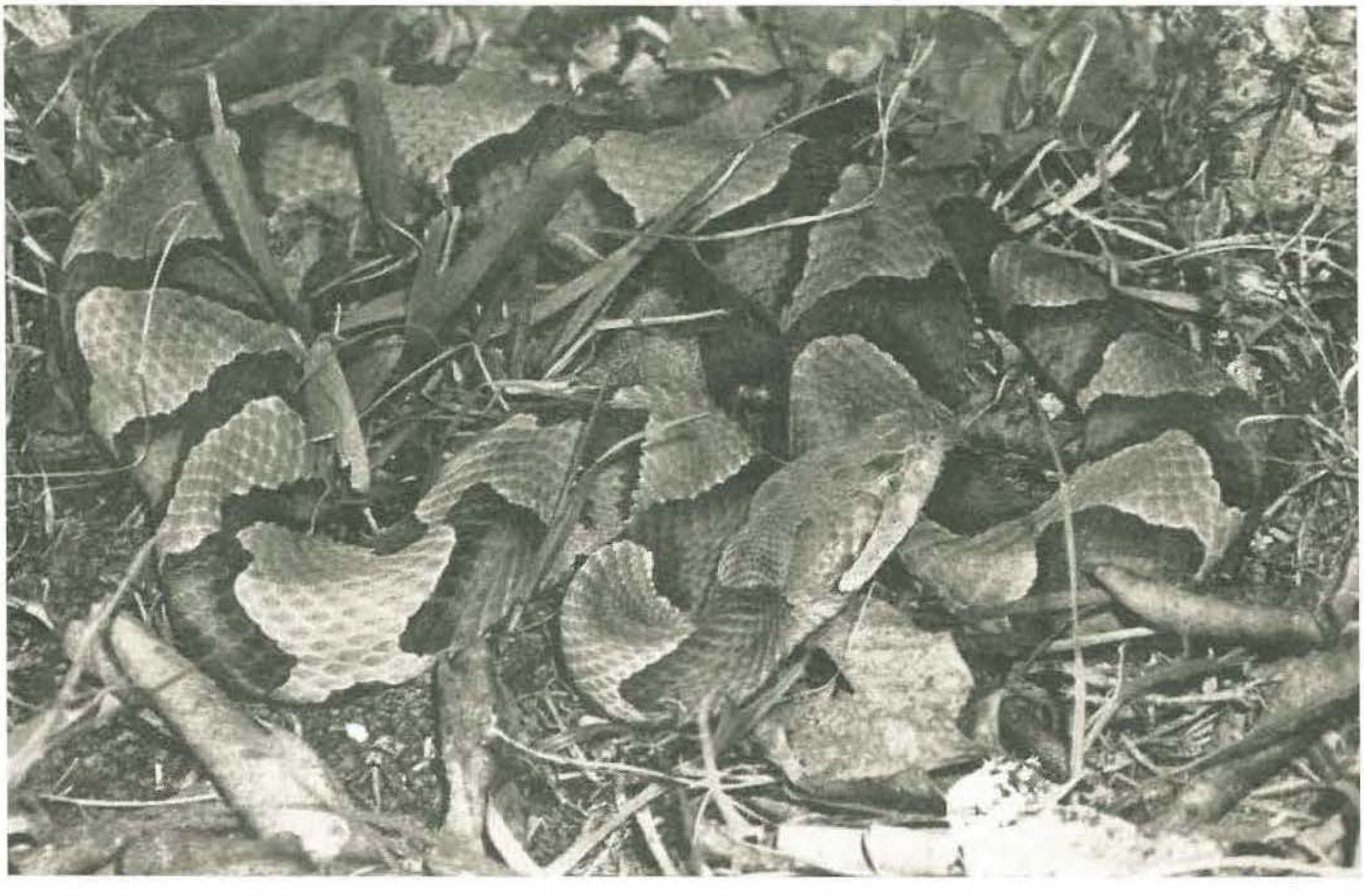

Photo By Ronald Sayers

Restricted range of the Southern Copperhead, below, makes it rare in Florida. It's found only in a few northwestern counties. By contrast, the Cottonmouth, or "moccasin," is common in all aquatic habitat—and may sometimes be found surprisingly far from water. Young of the species, below right, are well patterned, but the adults, above right, lose their distinctive pattern—are almost black when wet.

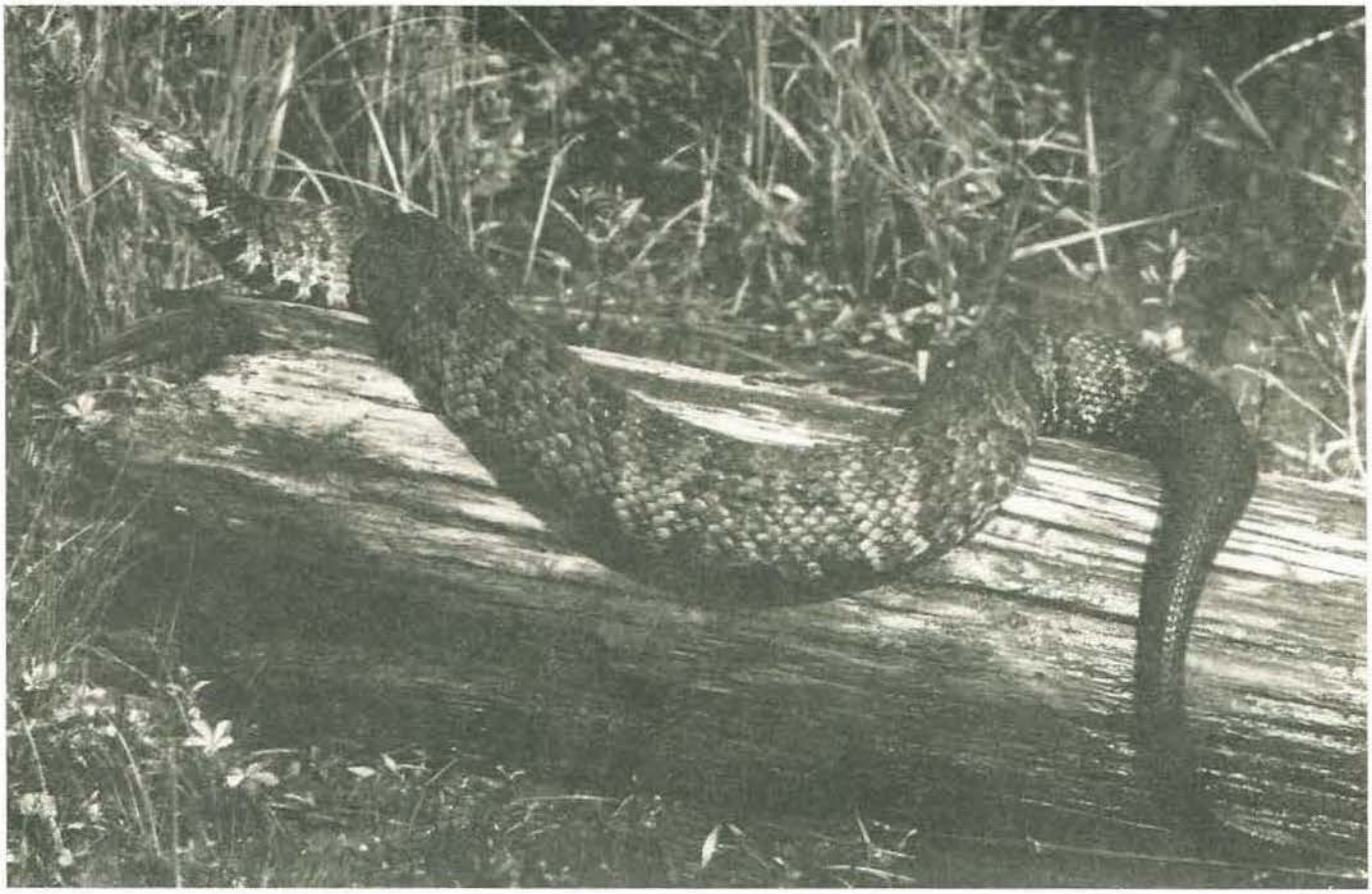

Photo By Jud Fulmer

There is value in the standard "cut and suck" method, a procedure probably familiar to most readers. Cross-sections are made at the fang punctures with a razor blade or a sharp knife and lymph and blood are drawn out the best way available—by mouth or, preferably, by some mechanical device. It is a feasible thing to do since venom ordinarily travels in the lymph, not the blood, and its progress toward vital areas is gradual.

The most common mistake is in making the cuts too large and too numerous. They may be advanced along the area of swelling, but a butchery of the bitten area is only of negative value. Small incisions are adequate for the extraction of poisoned lymph and blood. In making larger ones, the risk is increased that an important blood vessel will be cut.

The most reliable way of counteracting the effects of snake venom is with a snakebite serum. The use of such a serum, referred to as *antivenin*, entails some serious risks, however. Most serums are produced by injecting horses with gradually strengthened dilute doses of venom and then extracting serum from the blood when the animal has built up an immunity to the poison. Therefore, it is necessary to administer a sensitivity test for horse serum to a bitten person before injecting the antivenin. *Never* inject serum before making such a test. If the victim happens to be hypersensitive to horse serum, it will produce death more surely than will the venom.

There are only six species of venomous snakes in Florida—all of them easily recognized by anyone who takes the few minutes necessary to learn their distinctions. The brief descriptions following should be of assistance in learning to recognize the poisonous species.

Without implying narrow restrictions, it may be said that each species is apt to be found in a certain kind of habitat. Knowing where and under which conditions a species is most likely to be encoun-

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Photo By Leonard Lee Rue III

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tered will serve toward the avoidance of situations leading to snakebite.

The Eastern Diamondback Rattlesnake (*Crotalus adamanteus*) is the heaviest and probably the longest rattlesnake. It may be recognized by its large size and the dorsal pattern of dark, light-centered diamond markings bordered by yellow.

Found throughout the state, its habitat is most often palmetto flatwoods, but it may be encountered anywhere. While not aggressive, it does not hesitate to stand its ground when disturbed—nor does it always sound its rattle.

Dr. Archie Carr recalls accidentally stepping squarely on a rattlesnake's head as it lay coiled. The snake never rattled but merely shook the sand from its mouth after Dr. Carr leapt away.

Due to its generally quick disposition, its large fangs and extensively developed venom glands, and its wide distribution, the Eastern Diamondback Rattlesnake may be considered the most dangerous of Florida's venomous snakes.

Canebrake Rattlesnakes (*Crotalus horridus atricaudatus*) are the second largest rattlers in Florida. They are found only in the northern part of the state, ranging south to Alachua County. There should be no difficulty in distinguishing them from Diamondbacks. The Canebrake's pattern consists of blackish crossbands on a lighter—usually gray—background, with a pink stripe down the back.

It is a calmer snake, favoring the edges of swamps or deep hammocks. When disturbed, it is more prone to lie quietly and avoid detection than would be a Diamondback. This snake's coloration blends well with the shadowed landscape in which it is usually found.

Pigmy Rattlesnakes (*Sistrurus miliarius barbouri*) are a primitive type of rattler having head shields like a Moccasin and a slender tail bearing tiny rattles. Their basic color is dusky gray and they are marked with a row of brown or black spots on the back alternating with rows of spots along the sides. There is usually a pink dorsal stripe the length of the body.

Pigmys, also called "ground rattlers," are most often encountered within reach of water and a supply of frogs. They also eat small rodents. While irritable, they cannot be considered a serious danger because of their small size. It is highly unlikely that an adult of average health would die from the best bite a Pigmy Rattlesnake could deliver.

Water Moccasins (*Ancistrodon piscivorus*) are heavy, ordinarily sluggish snakes found in or near bodies of water, usually slow-moving or static ones. Unfortunately, they are frequently confused with harmless water snakes, which have the misfortune to bear a resemblance in their thick bodies and wicked-looking, triangular heads.

The Moccasins, as with other American viperine snakes, may be surely distinguished from non-

Photos By Ronald Sayers

The Pygmy Rattlesnake, or "ground rattler," below left, is a small cousin of the other rattlers. It is nervous and quite irritable but relatively harmless, at least to a healthy adult. A two-footer is a big one. The Canebrake Rattlesnake, right, is a large snake—second to a Diamondback. It inhabits the swamp edges and hammocks of northern Florida.

poisonous species by the presence of deep, heat-sensitive pits between the eye and nostril, and by their long, movable fangs. Moccasins *and* water snakes are banded, but the Moccasin's are distinctive, having light centers and a more rounded, "hourglass" shape. Also, Moccasins have a dark line down each side of the head, which itself has a deeper, more chiseled appearance than the heads of nonvenomous water snakes.

Moccasins will ordinarily avoid biting, gliding away quietly whenever possible, or opening their mouths in a threatening gesture that is usually a bluff—a good one. This habit has earned them the local name "cottonmouth" in most of the South (for the color of the interior of the mouth, naturally) and "trapjaw" in the Ozarks. The bite of the Moccasin isn't as potent as that of Florida's two large rattlesnakes, but a serious, and common, secondary result is gangrene.

The Southern Copperhead (*Ancistrodon contortrix*), closely related to the Moccasin, is easily identified by the dark brown "hourglass" bands on a light tan background, its wide head and slender neck, and a slimmer body than other Florida viperine snakes. They are found only in a few northwest Florida counties and are most frequently found in hammocks, floodplain forests and adjacent fields.

Finally, we come to the Coral Snakes (*Micrurus fulvius fulvius* and *M. f. barbouri*), which present the least threat of Florida's venomous snakes even though Coral snake venom is by far the most toxic, unit for unit. The facts are that the quantity of venom injected is small, the fangs are relatively short, and the Coral doesn't strike in the usual sense, but bite only if stepped on or handled roughly. Ordinarily, a shoe or heavy pantleg is sufficient protection. They may be said to present the least threat not because they are not dangerous, and not entirely because of their primitive fang structure, but chiefly because of their retiring habits and docile nature. They are fossorial snakes, living secretive lives under damp logs and other such dank, dark places, feeding on lizards, salamanders, skinks, invertebrates, and other snakes. The likelihood of anyone being bitten by a Coral snake without handling it is miniscule.

There are two harmless species that are confused with the Coral snakes since all are banded in ringed patterns of bright red, black and yellow. The arrangement of the bands, however, in the nonpoisonous types are quite different.

The venomous Corals have wide black bands separated from narrower red ones by thin yellow rings. The two similar nonpoisonous species, the Scarlet Snake (*Cemophora coccinea*) and the Scarlet King Snake (*Lampropeltis doliata*) have wide red bands separated by narrow black ones from slender yellow ones. Both Scarlets also have reddish or pinkish noses whereas the Corals always have black snouts.

The next time you are hunting, fishing, or just enjoying the tranquility in some place remote from the chaos of modern civilization and a snake appears on the scene, resist the instant impulse to kill it. Is it venomous? You can tell from a moment's observation. And even if it is, is it in a place where it will represent a real threat to anyone? No one would advocate leaving a poisonous snake where it would present a danger to human life or valuable animals, but if the encounter occurs out in the wilds, the snake deserves to be left alone.

You can protect yourself by learning to recognize the species, and, after all, there is a much greater statistical possibility you will be injured or killed by falling in your bathtub than from a snakebite. ●

LIBRARY
MARINE RESEARCH LABORATORY

24-Karat State Park

plenty of wildlife plus fishing, boating, camping, swimming—and historical sites—for the outdoorsman

By VIRGINIA NEWMAN

IN THE HEART of the Big Scrub country near the little village of Keystone Heights, in Clay County, lies a 1,414-acre remnant of what Florida must have been like centuries ago—big, wild, and beautiful.

Gold Head Branch (Mike Roess) State Park, although only 45 miles from Jacksonville and 26 miles from Gainesville, has an atmosphere of remoteness from the outside world. Yet the pristine beauty of this nature sanctuary doesn't, by any means, exist in "splendid isolation."

Visitors from all over the world are attracted by its spring-fed lakes, rolling hills, and deep forests. And blended into the idyllic vistas most unobtrusively are complete facilities for swimming, boating, fishing, picnicking, camping—even vacationing in comfortable cottages.

The park derives its name from Gold Head Branch, a clear stream that meanders along the floor of a mile-long, 70-foot-deep ravine, around which a nature trail now winds.

The Mike Roess part of the park's name was added several years ago in honor of a well-known conservationist who donated the nucleus of the acreage that became one of Florida's first state parks in 1935.

In the old days a grist mill, a cotton gin, and a sawmill were operated on the spring-fed underground waters of Gold Head Branch.

Visitors today can drive right up to the head of the ravine and look down the steep banks, but it's much more interesting to go down the zigzag stairway to ply the well-marked nature trail, perhaps stopping along the way to pan for gold. However, even the luckiest "prospector" can only bring up near-microscopic amounts of the glistening metal. It's really the fun of trying and not the results that count here. (The minute quantities of gold are believed to have been carried from the ancient rocks of the Piedmont Plateau, farther north in Georgia and the Carolinas.)

The ravine starts with a deep, bowl-shaped lime sink, at the bottom of which is a crystalline spring. The sides of the "bowl" and ravine are clothed with a dense hardwood hammock—of live oak, turkey oak, gum, magnolia, American holly and loblolly bay.

If you've got several hours to spend at Gold Head Branch, and a sturdy pair of legs, trace the nature trail that rims the ravine to Lake Johnson and the old mill site, where more than 100 species of trees, shrubs and vines can be found.

The temperature dips to the teens in winter, but escapees from the hustle and bustle of the cities throng to the park during warm weather. Most popular are the campgrounds and the 14 cottages overlooking big Lake Johnson. It's best to reserve the cottages far in advance for the summer months, but in spring and fall—when the weather is simply delightful—the camp areas offer almost pure privacy.

The lakeside cabins feature one large "sitting room" with sleeping accommodations, one separate bedroom, a tiny kitchen, and a bathroom. Cottages are furnished with dishes and kitchen utensils, but renters are asked to furnish their own linens and towels.

Reservations are accepted for periods of one and two weeks from June 1 to September 1, the "busy season." During these three months, overnight visitors are accommodated only if cottages are available between reservation-holders, of course. For the rest of the year, rentals are by the day or week. Year-round rates are $15 per day, or $90 per week, plus tax.

Our family stayed in one of these cottages early one spring—the only occupants of any of the cottages at the time—swimming, boating, and fishing during the day and enjoying a roaring blaze in the fireplace on the cool nights. We felt like we were as far from civilization as we would have been in a cabin in the Tetons!

With no television, no telephone, no neighbors in the adjacent cottages, and no traffic noise, there was a peace that we had rarely experienced. The first night, our family went out to soak in the quietness from the screened porch overlooking the shiny lake. We could hear night birds calling softly. We could hear the muted lapping of water against the shore. The stars cast a glow on the entire scene.

"All is calm, all is bright," said one of the children. And this, we all agreed, is surely what those words must have meant.

The park's four lakes are not only beautiful, but filled with fun. The swimming area is in Lake Johnson, nearly 500 acres in size. The clear shallows fold against a sandy beach—ideal for the small fry—while a nice pier juts out to the deep water.

Lifeguards are on duty from May through August. A combination refreshment-lounge building is on a grassy knoll above the beach.

(Continued on next page)

A camping family "checks in" at entrance, left, to Gold Head Branch State Park. Spacious parking spot, with water and electricity, table and grill, awaits them. Then, a peaceful waterfront beckons, below—a lake that offers good fishing.

Florida State Park Service Photos

(*Continued from preceding page*)

All four lakes abound with fresh water game fish: largemouth bass, bluegill, speckled perch and other species. Canoes, rowboats, and two-person paddle boats can be rented. Overnight campers and cottage occupants can moor their own craft on Lake Johnson within a short walk of their lodgings, using the public boat ramp to cast off to the huge fishing haven.

Sheelar Lake and Pebble Lake are smaller but more than 90 feet deep and are used for bank fishing or skin and SCUBA diving only. Sheelar Lake is preferred by divers because of its clear blue waters and underground spring.

Picnickers from surrounding areas throng to the park in the summer, especially large groups on company or organizational outings, family reunions, etc. There are several spacious picnic pavilions that will accommodate such groups. Family picnic tables and charcoal grills are scattered throughout the park, of course. Playground equipment is provided for the kiddies, and restroom facilities are convenient to all the public areas.

Notwithstanding its well-rounded program of leisure time activities and its outdoor equipment, the central emphasis of Gold Head Branch remains its scenic beauty. The entrance road runs through a turkey oak scrub, where the trees are scanty, 20-to-30-feet high. Here and there among the turkey oaks is a persimmon, a black cherry, or another species of oak tree. Colorful wild flowers are plentiful here through the spring, summer and fall—and a few are to be found even in the cold winter months.

Nature trails invite the visitor to get acquainted with the prolific flora and fauna of the entire park, but the ravine trail is by far the most absorbing. Here in the dense growth of towering trees and luxuriant shrubs the wood duck hides her young, the vireos sing in the trees, and the squirrels chatter and play. Walk the trails slowly and quietly with your mind at rest so you can see, hear, and actually *feel* all there is here.

The ferns are particularly interesting among the plants, including the beaded fern that may have been brought to Florida on the feet of birds migrating south. The beaded fern is rather rare, and is a beautiful, lacy plant. At the head of the ravine it grows to a height of five feet.

A myriad of birds can be spotted at Gold Head, including the unusual loggerhead shrike, which impales its prey on thorns or barbed wire fences. Cardinals, coots, hawks, herons, owls, orioles—more than 100 bird species have been recorded at this park.

There are deer, opossums, raccoons, and other wild animals there, too, but they're only for "looking," of course. The entire park is a wildlife sanctuary and no hunting is allowed. The native animals are easiest to observe in the early morning or late evening hours.

During the summer season, park rangers sometimes schedule evening programs for campers—all about the plant and animal life at Gold Head Branch. These are not dry lectures, either. The rangers give amusing and interesting spiels on each subject.

To "get away from it all" to this natural paradise, make a cottage or campground reservation by writing Gold Head Branch (Mike Roess) State Park, Route 1, Box 305, Keystone Heights, Florida 32656. ●

You can have your own lakeside cottage at Gold Head Branch State Park—up to two weeks, that is. Fourteen fully furnished units for family use are now available. Reservations are taken for the period June through August—"the busy time." Contact superintendent at given address.

Calibers

what one shooter considers ideal for big game hunting may prove far from acceptable to others—most hunters differ on caliber for best results

By EDMUND McLAURIN

More different rifle calibers have been made than most shooter's imagine. For example, just to meet the needs of home reloaders of sporting ammunition, Fred Huntington, head of RCBS, Oroville, California, stocks reloading dies for more than 600 different calibers!

Why so many? That question was put to me during a discussion period following one of my recent Firearms Educational Clinic presentations.

There are, as I pointed out, a number of logical reasons—as well as a few not so logical.

Firearms manufacturers periodically bring out rifle models in new calibers or chamber old models for new calibers to attract consumer dollars. They know that whether or not he needs it, the average lover of guns is likely to be fascinated by, and probably filled with a longing to own, a new rifle model or a new caliber chambering of an old favorite.

Also, when the gun magazines start lauding the merits of a newly introduced rifle caliber they have test fired, influential editorial effect is exerted, too.

Next, shooters themselves have diversified caliber preference. What one man considers ideal caliber in a big game rifle may not be acceptable to another.

So far as practical, firearms manufacturers try to give shooters wide range of caliber choice, even when—so far as field performance is concerned—one caliber listing may practically duplicate another ballistically.

Further, when ammunition makers get enough letters from "wildcat" home reloaders asking for a specific, but as yet unavailable commercially loaded caliber, chances are good the caliber will be given serious consideration and eventual production. Repeated demand tends to spur cumulative research.

Currently, one of the most frequent requests is for commercial loading of a more powerful .30-30 caliber cartridge that can be safely used in the Winchester Model 94, of which more than three million are in use.

Basically, this could mean development and substitution of a *rimmed* type cartridge for the present .30-30 Winchester rimless cartridge now possessing only moderate killing power and about 150 yards maximum range usefulness.

Since there is continual demand for a more powerful .30-30 Winchester caliber cartridge, it may come about.

However, some of the calibers and cartridge loadings shooters propose, factory ballisticians must veto for reasons of safety. Despite marked technical advances in ammunition manufactures, there are limits to which many rifle powders can be safely loaded, as well as rifle breech pressures that cannot be safely exceeded.

There is also a limit to the velocity a light projectile like a bullet can be driven by a small quantity of power-producing powder loaded into a relatively small package.

Even so, research technicians at the major cartridge companies appreciate and evaluate shooter opinions.

On their own, these same technicians frequently come up with some new and interesting—and sometimes sensational—products. To keep their jobs, they must continually strive to at least match the developments of their competitors.

Consider the rivalry that has developed between the Winchester .270 and the Remington .280 calibers, for example.

The .270 Winchester has proved one of the best and most popular rifle calibers ever made for sporting firearms. After more than 25 years, the .270 is a much used and talked about hunting caliber. Gun writer Jack O'Connor lauds the .270 highly. From extensive field use of the .270, O'Connor knows what the caliber can do. So do I.

Although Winchester developed the .270 caliber, and dominated the hunting cartridge limelight with it for many years, Remington was not idle. It was patiently experimenting with the .280. Now, the .280 Remington caliber is challenging the .270 Winchester, aided by availability of some excellent rifle models chambered for the .280 Remington cartridge.

Ballistically, the .280 Remington caliber is much like the .270 Winchester caliber. Both are 7mm, and bullet velocities for comparable bullet weights are closely similar. Any big game animal shot with either caliber, firing proper bullet weight and style for the game hunted, never knows the difference!

(*Continued on next page*)

If there is any favoring factor, it is that the .280 Remington caliber can be had in more different commercial bullet weight loadings than the .270 Winchester.

However, in these days of home reloading, and easy purchase of a variety of ready made bullet weights and styles, that advantage can be quickly and safely matched. Reloading manuals contain a number of tested formulas that give improved loadings in the .270 Winchester caliber, if need exists (which I do not think does for the average .270 caliber user). For me, and for most .270 Winchester caliber users, the 130 grain bullet weight commercial loadings perform laudably. The same holds true of the 125 grain bullet weight loading in the .280 Remington caliber.

Actually, the two rivals virtually duplicate each other's hunting performance, in the named bullet weights.

In case size, the .280 Remington cartridge case is slightly longer, from head to shoulder, than the .270 Winchester.

Although they look much alike at casual glance, a .280 cartridge cannot be loaded and fired in a .270 rifle chambering.

With so many center fire caliber look-alikes, it pays to check ammunition for correctness before loading rifle chamber and locking bolt or breechblock.

Many of our present center fire calibers were not brain children of our big ammunition manufacturers at all, but of inventive home reloaders and professional gunsmiths.

When one thinks of these "wildcat" calibers—meaning calibers not originally created and marketed by the commercial ammunition makers—names of experimenters like P. O. Ackley, Harvey Donaldson, Dan Cotterman and A. O. Nieder instantly come to mind. There have been many others, of course, but their names are not easily recalled However, *all* "wildcat" cartridge experimenters had a part in promoting interest in new caliber creations.

Not every lauded "wildcat" caliber was subsequently adopted by the commercial ammunition makers, but the best ones were invariably chosen for mass production, and sporting rifle models were chambered for them. Some of the adoptions have enjoyed growing popularity; others have experienced only mild acceptance.

The .257 Roberts cartridge was one of several "wildcat" creations adopted and commercially loaded by Remington. Originally intended to be a varmint cartridge, the .257, when loaded with a 117 grain weight bullet, proved a practical caliber for medium size big game.

But, for some reason, the .257 Roberts caliber never swept the country like some of the other related category calibers. Some shooters say that Remington hurt the caliber's chances by tacking on the surname of Ned Roberts, its inventor, instead of the well-known name of Remington. Be what may, it is fact that the .257 Roberts caliber, although an excellent one for deer and other thin-skinned big game, has gradually faded into the background. However, it is still a commercially made cartridge loading, as there are enough rifles of .257 Roberts caliber in existence to justify continued marketing of the cartridge.

When sportsmen's interests turned towards the .30-06 caliber following World War I, Savage was caught flat-footed.

The mechanical design of the Savage Model 99, from first model introductions to this day, precludes use of long cartridges like the .30-06 and .270.

Savage created the .300 Savage caliber cartridge primarily to offer a parallel performer to the longer-cased .30-06.

The .300 Savage caliber quickly earned a reputation as a one-shot killer on deer. Its continued popularity has been hampered by the fact that big game rifle models among rival firearms manufactures are not now being made to chamber cartridges of .300 Savage caliber, although the same rivals make and market .300 Savage caliber ammunition. In fact, there are so many Savage Model 99 rifles of .300 Savage caliber still in use, it is likely sporting ammunition in that caliber will continue to be commercially loaded for many years before general manufacture is dropped.

The .300 Savage caliber story reflects a somewhat similar history of the .348 Winchester caliber.

Winchester created the .348 caliber specifically for its Model 71 lever-action big game rifle.

The .348 Winchester cartridge is a potent package. It has plenty of stopping power on big game shot over medium hunting ranges. However, new rifle models are not being chambered for it, and the Winchester Model 71 rifle has been discontinued.

But, again, ammunition manufactures in this caliber are being commercially continued, to furnish fodder for the many .348 caliber rifles still being carried into the woods.

Introduction of a new and promptly accepted caliber often will have adverse effect on consumption of ammunition calibers intended for similar use.

The appearance of the .222 Remington varmint cartridge had quick, adverse influence on sales of .22 Hornet, .218 Bee and .219 Zipper varmint calibers. Simply, the newcomer proved its superiority over the former favorites.

From my viewpoint, I feel we could very easily get along with fewer big game and varmint rifle calibers. There are now many that virtually duplicate each other in field performance. Slight ballistic differences that show up in slow, prolonged bench-rest target shooting generally aren't overly influential in hunting results.

It would further simplify home ammunition reloading production to have fewer calibers. Not so many different sets of reloading dies would have to be owned.

At the moment, I have the expense of maintaining reloading die sets for fourteen different center fire rifle calibers, just to carry out required editorial ballistics tests for the calibers most used in Florida.

With fewer calibers to produce, the ammunition manufacturers could devote more time to further developing logical ones to maximum efficiency by collaborating as participating members of the Sporting Arms and Ammunition Manufacturers' Institute, which sets trade standards.

Consider the present day .22 long rifle rimfire cartridge: 'Way back, the members of SAAMI put great emphasis on .22 caliber research and development. The result is one of the most accurate rifle calibers made.

With the same approach, certain of our already good center fire hunting calibers could literally become super performers. That day may not be as far off as you think.

RELATIVELY FEW shooters purchase big game rifles completely equipped. Most initial purchases usually lack sling swivels and sling, rubber recoil pad, and a peep or scope sight of needed style and optical qualities. In such cases, these practical shooting aids have to be purchased separately.

It is my observation that the average shooter is a bit perplexed as to exactly which accessories should be matched with a particular rifle model to improve it to the maximum.

Big game rifles are highly individualistic. Accessories that are perfect for, say, a Savage Model 99 might not be at all suitable for use with a Remington 742 autoloader.

The situation is further complicated by the fact that Remington, Winchester and other firearms manufacturers, have made periodic changes in the mechanical design and component parts of certain of their big game rifle models. This holds especially true of Remington autoloading models 740 and 742, the slide-action Model 760 Remington, and the Winchester Model 100. Accessories made for early versions sometimes will not fit later models, or vice versa.

It is important that any planned accessory additions to basic rifle be carefully selected for characteristics of adaptability and eventual usefulness.

Unless a shooter knows the peculiarities of the different gun models and has made a study of the various types of available gun accessories, or has a qualified advisor, proper selection can be a problem.

Boyd Williams, of Williams Gun Sight Company, Davison, Michigan 48423, himself a hunter, has long realized how puzzling some gun accessory selections, or correct customizing of basic rifle, can be. Every year Boyd handles hundreds of mail inquiries from shooters seeking technical advice and estimated gunsmithing costs.

To help perplexed shooters, Boyd has developed a series of illustrated folders on how to customize certain popular rifle models with the exact accessories suited to their design and function.

The compilations represent resumes of gunsmithing jobs the Williams firm does for shooters as custom work, or technical recommendations made to professional gunsmiths served by the company. Average gunsmithing costs, as well as prices of adaptable accessories, are included.

Available are single "how to" folders on the Remington Model 700 bolt-action big game rifle, the Remington Model 760 slide-action, the Remington 740 and 742 autoloaders, the Savage Model 99 in its various versions, and the Winchesters Models 70, 54, 670 and 770. Marlin Models 336, 36 and 93 have group coverage in one folder, as do Winchester Models 88 and 100.

By the time you read this, there should also be available advisory texts on improving popular models of .22 caliber rifles.

The illustrated printings describe the various styles of metallic sights and sight heights that can be successfully fitted to an owned rifle model, as well as adaptable scope sight mounts and recommended scope sight magnifications and reticule styles.

Sling swivel types are designated specifically, to make it easy to get the correct swivel set.

For owners of early model Remington 740 autoloading rifles, there is information on how to tighten them up for improved accuracy, including easy installation of a small aluminum stiffening block in fore-end.

There is also information on improving early versions of the Remington 760 slide-action big game rifle—which can sometimes benefit from creation of a few thousandths of an inch clearance between action tube guard and barrel.

The Williams guidance printings are well worth writing for and saving. ●

CONSERVATION SCENE

Familiar Bills Reappear

APPROXIMATELY 3,000 bills were introduced during the first week of the 92nd Congress. Several conservation measures which almost made it through the last Congress were among those dropped in the hopper early this session, according to the Wildlife Management Institute.

Bills to abolish record-keeping requirements on .22-caliber ammunition have been introduced in the House and the Senate by Congressman Al Ullman (Oregon) and Senator Gale W. McGee (Wyo.). Another measure on which time ran out during the 91st Congress was the proposal to provide a criminal penalty for shooting animals from aircraft. Senator Gaylord Nelson (Wis.) and Congressman John P. Saylor (Pa.) have reintroduced this bill in the two houses.

A flurry of bills and resolutions has been introduced in both the House and Senate to create a Joint Committee on the Environment. This joint committee, among other things, would conduct studies on how man can better harmonize with his environment. Several bills and resolutions have been introduced that would amend the rules of the House and establish a standing Committee on the Environment which would consider all environmental legislation for that body.

On the negative side, Senator Mark O. Hatfield (Oregon) has introduced S. 350, a bill dubbed the American Forestry Act. In presenting the bill, Hatfield stated that timber management on federal forestlands must be intensified in a manner consistent with good environmental practices. "To this end," he said, "my legislation includes provisions for a federal forestland management fund. This fund would include receipts from federal timber sales, and expenditures would be authorized for reforestation, improvement of timber management, improvement of quality of the environment, and forestland research, consistent with the principles of multiple use on our national forestlands."

It sounds good, but on closer inspection conservationists report the offering to be a rehash of the Timber Supply Bill which Congress rejected last year. As indicated by Hatfield's remarks, this legislation could result in intensive timber management on national forest lands with little consideration for other values.

Wildlife Federation Awards

THE NATIONAL Wildlife Federation announced the winners of 1970 national awards for distinguished service in conservation presented at the Federation's 35th annual meeting in Portland, Oregon.

Named Conservationist of the Year was James Morrison, Jr. of Atlanta, Georgia. As Chief of the Georgia Game and Fish Department's Information Section 1963-1970, Morrison waged a relentless battle against fish and wildlife destruction by stream channelization in the state, losing his job as a result.

The Distinguished Service Award in legislation was presented to Senator Philip Hart of Michigan who played an important role in passage of the Endangered Species Legislation. During 1970 he conducted hearings which helped publicize the dangers of herbicides, pesticides and other chemicals.

Jacques Cousteau received the Conservation Communications Award for his television show "The Undersea World of Jacques Cousteau" which has stimulated public understanding and appreciation of the world's fish and wildlife.

Joseph Paul of San Francisco, California, was named Water Conservationist of the Year for his efforts to preserve California's last remaining free-flowing streams. As founder and chairman of the Committee of Two Million, Paul brought together representatives of a variety of California groups to oppose elements of the state's water plan that would have dammed the last of the state's rivers.

The Wildlife Award was presented to Drs. Frederick and Frances Hamerstrom of Plainfield, Wisconsin, for their work in preserving the prairie chicken. In addition to their many years of research on prairie chickens, the Hamerstroms formed the Society of Cupido Pinnatus (prairie chicken) and the Prairie Chicken Foundation to put their knowl-

APOLOGIES!

For several issues now, your monthly copy of FLORIDA WILDLIFE has been received somewhat late. Regardless of the date on the cover, however, the contents have been on time. Material appearing in this issue was originally scheduled for the April issue. Earlier production and mailing schedules should be resumed in a few months.

edge to work in saving the species.

The Air Conservation award went to John Esposito and the Nader Task Force on Air Pollution for "Vanishing Air," their report on air pollution. The report documented the dangers of air pollution in the United States and sparked public pressure on Congress which contributed to passage of the Clean Air Act of 1970.

Douglas MacArthur High School Anti-Pollution Committee in Saginaw, Michigan, won the Youth Conservationist Award. Under the guidance of two biology teachers the students educated themselves to bring about solutions to local problems.

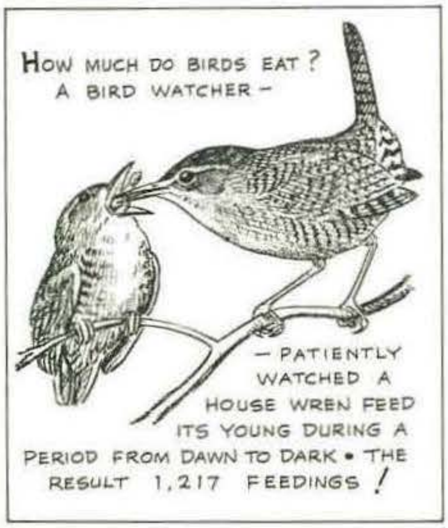
The Federation's special award was made to Patrick Cullen, a staff writer for the Palm Beach Florida Post-Times, for his crusading journalism which has brought to the attention of many Floridians the nature and extent of the environmental problems facing them. Two series by Cullen, "Paradise Lost" and "Paradise Polluted," explained Florida's complicated ecological problems and spurred the public into action.

Secret Life of the Forest

New insight into the growth and life cycle of the tree and its vital importance to our environment, as well as a description of the complex interrelationships of the woodland community, are provided by Richard M. Ketchum in The Secret Life of the Forest (American Heritage Press, $7.95). More than 100 color illustrations reveal with striking clarity the marvelous inner life of America's woodlands. The book has been produced in co-operation with the St. Regis Paper Company, which originally commissioned this series of remarkable paintings.

Mr. Ketchum points out that today's flora is the culmination of a process that has been taking place for some billions of years, and opens his book with an outline of plant evolution since primeval times. He then explains the miracle of photosynthesis, the process by which trees and plants provide oxygen for the air we breathe—thus making life on earth possible. He describes how "trees and other green plants use energy from the sun to transform elements into food for themselves at the same time they release oxygen into the atmosphere."

Nature Notes



HOW MUCH DO BIRDS EAT ? A BIRD WATCHER –
– PATIENTLY WATCHED A HOUSE WREN FEED ITS YOUNG DURING A PERIOD FROM DAWN TO DARK • THE RESULT 1,217 FEEDINGS !

The author goes on to sketch the internal structure of the tree —the bark, cambium layer, xylem, phloem, and leaves—and to relate how the tree utilizes the products of photosynthesis. He points out the crucial importance of water to the growth of trees and other plants and to all life on earth. "A single acre of forest land, during the course of an average growing season, may produce between three and four tons of usable wood. . . . To manufacture those three or four tons requires some four thousand tons of water . . . it takes nine hundred pounds of water to produce a pound of dried alfalfa, five thousand pounds to produce a pound of wheat." Yet the water in the environment of our planet is contained in a closed, constantly recirculating system. "The amount of moisture accessible to all forms of plant and animal life now and in the future is fixed—which explains why it is so essential to preserve its purity."

The author also considers the soils in which trees grow, discusses the birds, animals, and other creatures that make up the woodland community, and explains the vital process of growth and decay in the forest known as the carbon cycle. There are descriptions of different types of forests and the specific varieties of trees that grow in each, plus an account of modern tree-harvesting practices. Magnificent four-color illustrations by Jack Kunz and other artists illuminate the text.

Wildlife Skin Sales Law

The New York Court of Appeals has ruled that two state statutes prohibiting the importation and sale of skins from rare and endangered species are constitutional, according to the Wildlife Management Institute. The A. E. Nettleton Company, which deals in footwear made from **alligator**, crocodile, and caiman skins, had sought an injunction restraining enforcement of the laws.

The so-called Harris Law provides that "The importation, transportation, possession, or sale of any endangered species of fish or wildlife, or hides or other parts thereof, or the sale or possession with intent to sell any article made in whole or in part from the skin, hide or other parts of any endangered species of fish or wildlife is prohibited." The Mason Law states that no leopards, snow leopards, clouded leopards, tigers, cheetahs, alligators, caiman, crocodile, vicuna, red wolf, polar bear, cougar, jaguar, ocelot, or margay may be sold within the state of New York. It also provides for the issuance of warrants for the search and seizure and forfeiture of all goods held in violation of its provisions. Exceptions are made, however, permitting licenses to import these species for "zoological, educational, and scientific purposes."

Meet Your Commission

O. L. Peacock, Jr.
Commissioner
Fort Pierce

O. L. Peacock, Jr., 30, Fort Pierce businessman, rancher, and conservationist, has been appointed to the Game and Fresh Water Fish Commission to succeed Robert E. Langford of Winter Park, whose term expired in January. Announcement of Peacock's appointment was made by Gov. Claude R. Kirk, Jr., in December 1970.

The new commissioner is a native Floridian—born in West Palm Beach, the son of Mildred Vare Peacock and the late O. L. Peacock. He is not related to Commissioner C. A. "Pete" Peacock of Miami, also a Kirk appointee to the Game and Fish Commission.

He attended St. Lucie County public schools and Sewannee Military Academy, Sewannee, Tennessee, and is a 1958 graduate of Dan McCarty High School, Fort Pierce.

Peacock attended the University of Florida, Gainesville, and Florida Atlantic University, Boca Raton, from which he was graduated with a B.A. in history.

He enlisted as a private in the U.S. Army in 1963 and was discharged with the rank of captain in 1968, having served in Europe and the Middle East. He holds the Army Commendation Medal.

Mrs. Peacock is the former Ann Jackson of Windsor, England.

Commissioner Peacock is president of Peacock Fruit & Cattle Corporation, Fort Pierce, producers of citrus fruit and Brangus beef cattle on the Peacock Ranch in southwest St. Lucie County.

He is also director of IEA Corporation, a West Palm Beach firm formerly known as Industrial Electronics Associates. The corporation deals in various products including industrial and marine electronics equipment.

Peacock is a former member of the Florida Commission on Indian Affairs, to which he was appointed by Gov. Kirk when that commission was created in 1969. His affiliations include the American Ordnance Association, the Reserve Officers Association, the Florida Historical Society, the Florida and St. Lucie County Cattleman's Association, and the Chamber of Commerce State Affairs Committee.

He is a life member of the National Rifle Association, a St. Lucie County special deputy sheriff, and for a year and a half has served as a deputy wildlife officer of the Game and Fresh Water Fish Commission.

Commissioner Peacock's hobbies are gun collecting, hunting, military history, and wildlife management.

In the latter connection he has conducted for a number of years a comprehensive game management program on the 24,000-acre Peacock Ranch. Employing techniques and suggestions of the Game Management Division of the Game and Fish Commission, he has seen populations of deer, turkey, and quail increase on the property.

He particularly enjoys quail hunting, but hunts all game species.

Recreational shooting has been a lifelong interest of Commissioner Peacock's. He grew up using hunting and plinking guns, and during his service years was a competitive shooter—with pistol, smallbore rifle, and high power rifle. He also reloads ammunition.

A prized possession is the Winchester .30-30, Model 94 with the octagon barrel that his grandfather, Congressman William S. Vare, a senator from Pennsylvania, brought to south Florida in 1896.

"In those days," says Peacock, "the railroad came only as far south as Titusville. My grandparents came by boat to the Fort Pierce area and built a hunting and fishing camp in 1896."

The Commissioner feels the greatest challenge for him lies in finding ways to increase the amount of lands open to public hunting.

"We must look to the future and provide places for Florida hunters to enjoy their sport. We must find money to purchase more land or obtain long-term leases. It will take the cooperation of both the state and federal governments, the sportsmen, private landowners, and the Commission if we are to meet the needs of our state's growing number of hunters," he says.

"If I can contribute to this land acquisition program, I will consider my service on the Commission to have been worthwhile." ●

For that BIG ONE that didn't get away

ELIGIBILITY REQUIREMENTS SPECIES	
LARGEMOUTH BASS	8 pounds or larger
CHAIN PICKEREL	4 pounds or larger
BLUEGILL (BREAM)	1 ½ pounds or larger
SHELLCRACKER	2 pounds or larger
BLACK CRAPPIE	2 pounds or larger
RED BREAST	1 pound or larger

All fish must be taken from the fresh waters of the state of Florida, as defined by the Game and Fresh Water Fish Commission. Fish must be caught on conventional fishing tackle, with artificial or live bait, in the presence of at least one witness.

The catch must be weighed and recorded at a fishing camp or tackle store within the state by the owner, manager, or an authorized agent of the respective establishment.

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is available without charge, to any and all subscribers to Florida Wildlife Magazine, and their immediate families, who catch any of the fresh-water game fish of the prescribed species and size requirements. Citation, showing recorded date of the catch, will be mailed to the applicant upon receipt of the following application form that has been properly filled out and signed.

Only fishing citation applications received within 90 days from date of catch will be honored.

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Game & Fresh Water Fish Commission, Tallahassee, Fla.

Please send me the Florida Wildlife Fishing Citation with the inscribed data listed below:

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City__________ State__________ Zip No.__________

Species__________ Weight__________ Length__________

Type of Tackle__________

Bait or Lure Used__________

Where Caught__________ in__________ County

Date Caught__________ Catch Witnessed By__________

Registered, Weighed By__________ At__________

Signature of Applicant__________

CUT OUT AND SAVE THIS APPLICATION BLANK

Anhinga (water turkey)

Photo By Wallace Hughes

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